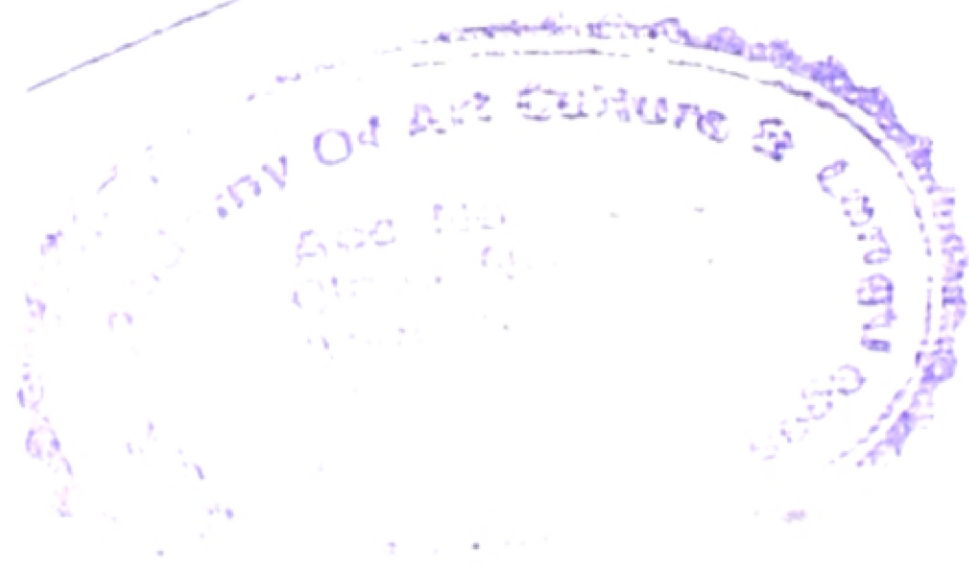




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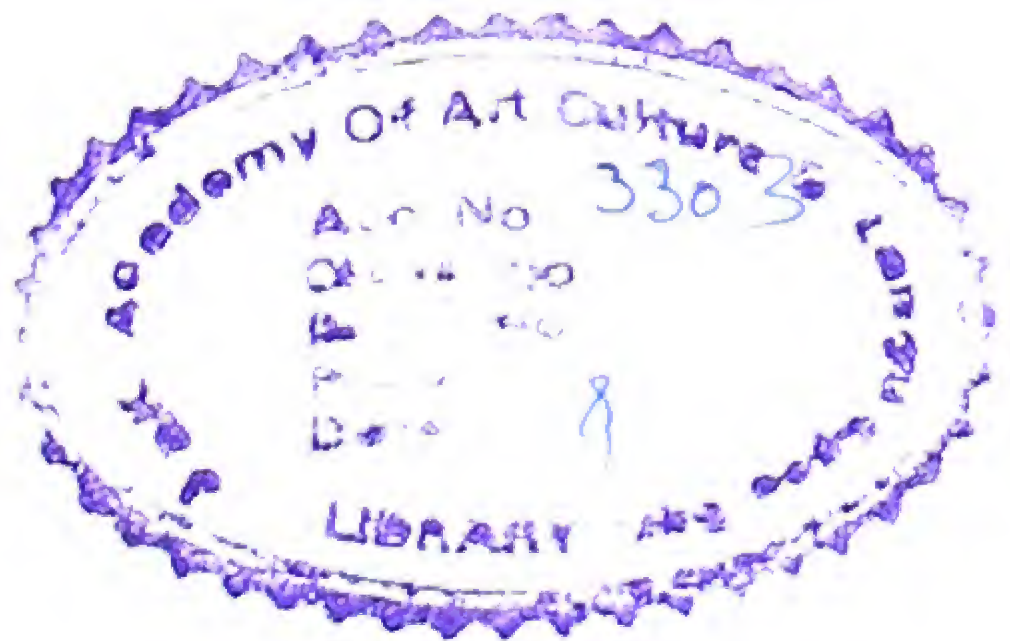
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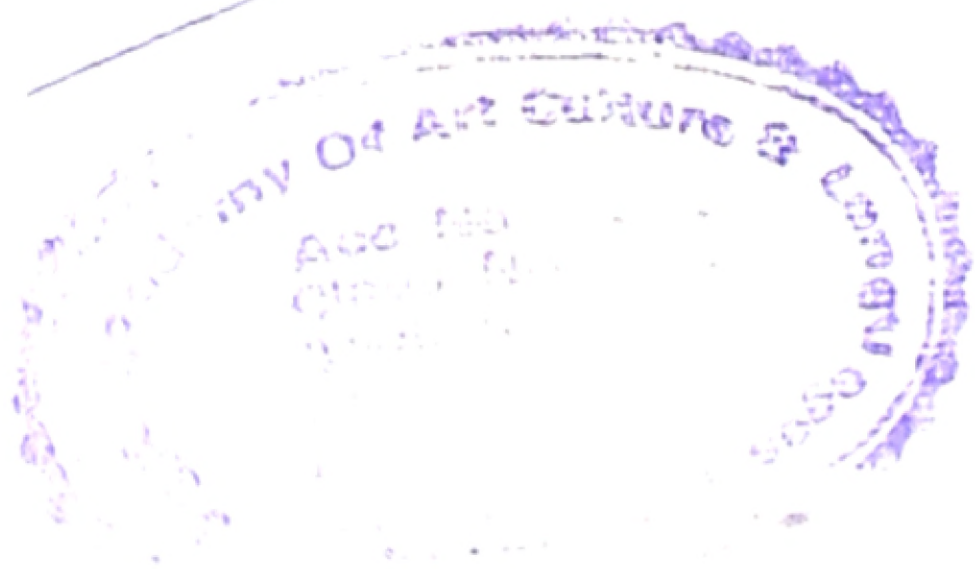
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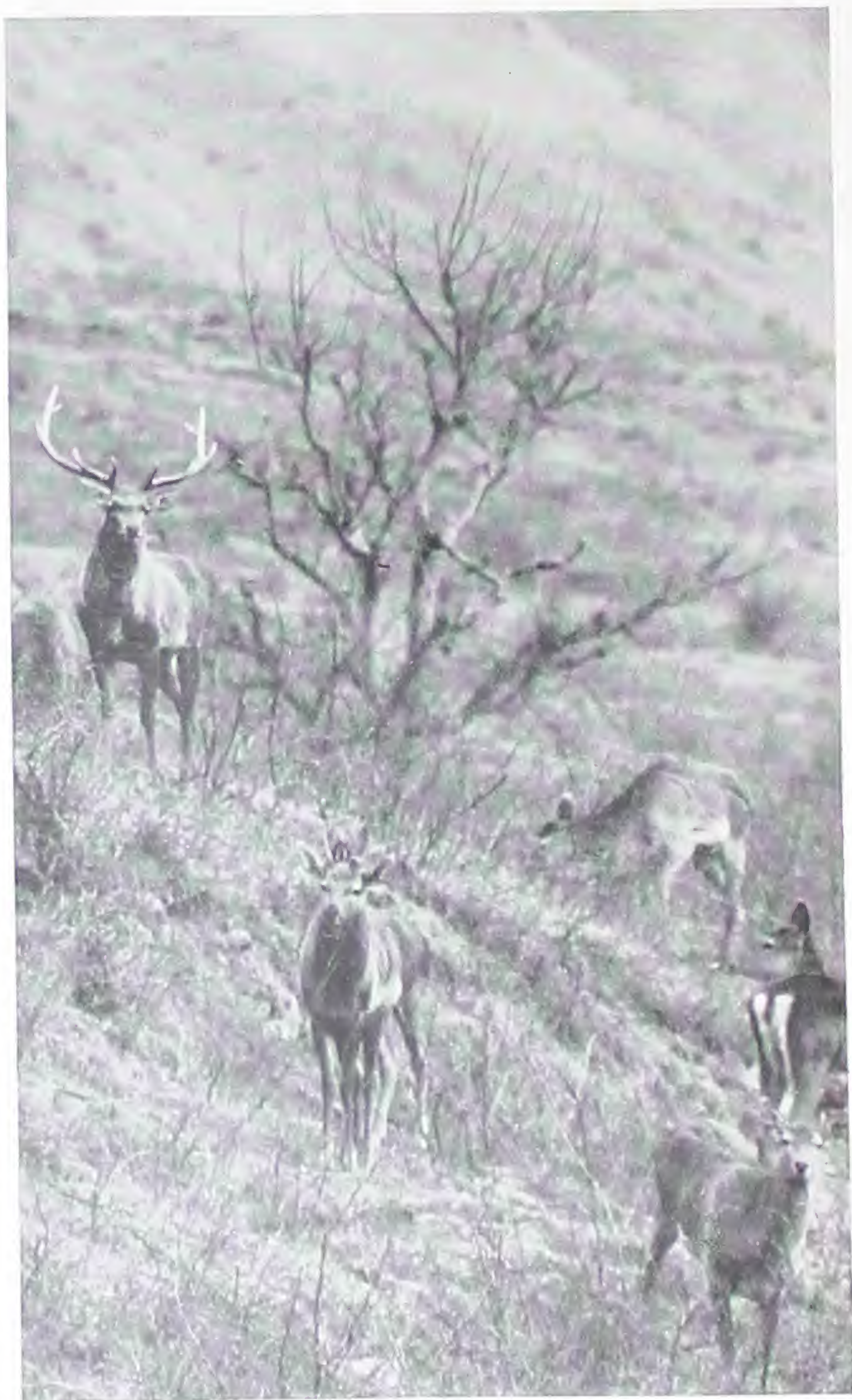
STALKING IN THE HIMALAYAS
AND NORTHERN INDIA



Cultural Academy







BARASINGH ON THE LOW GROUND IN MARCH

STALKING
IN THE HIMALAYAS AND
NORTHERN INDIA

BY
LT.-COLONEL C. H. STOCKLEY,
D.S.O., O.B.E., M.C.

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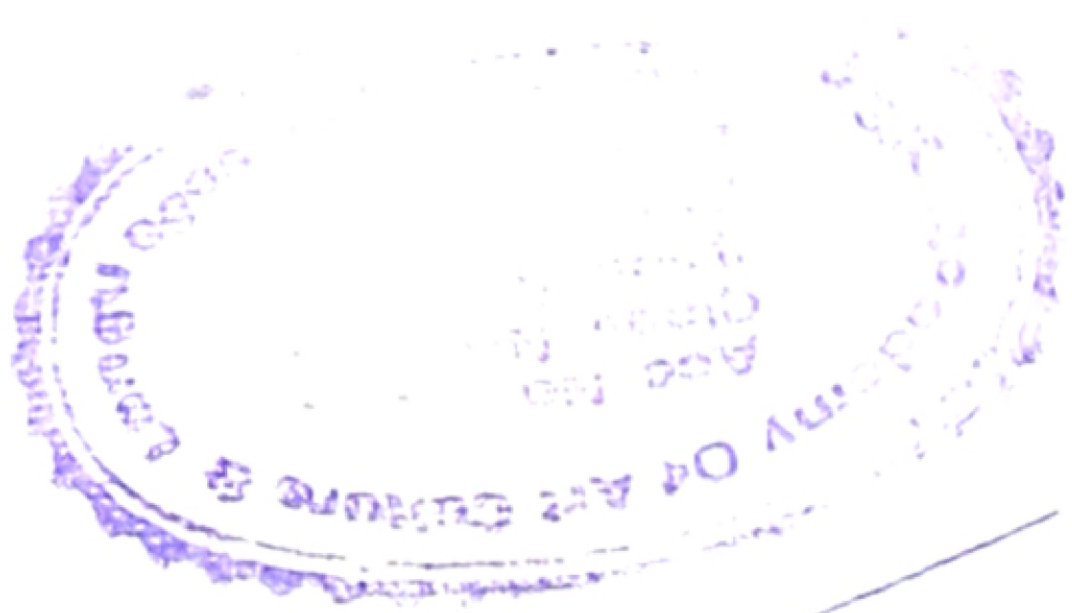
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A HILL ROAD IN KUMAON

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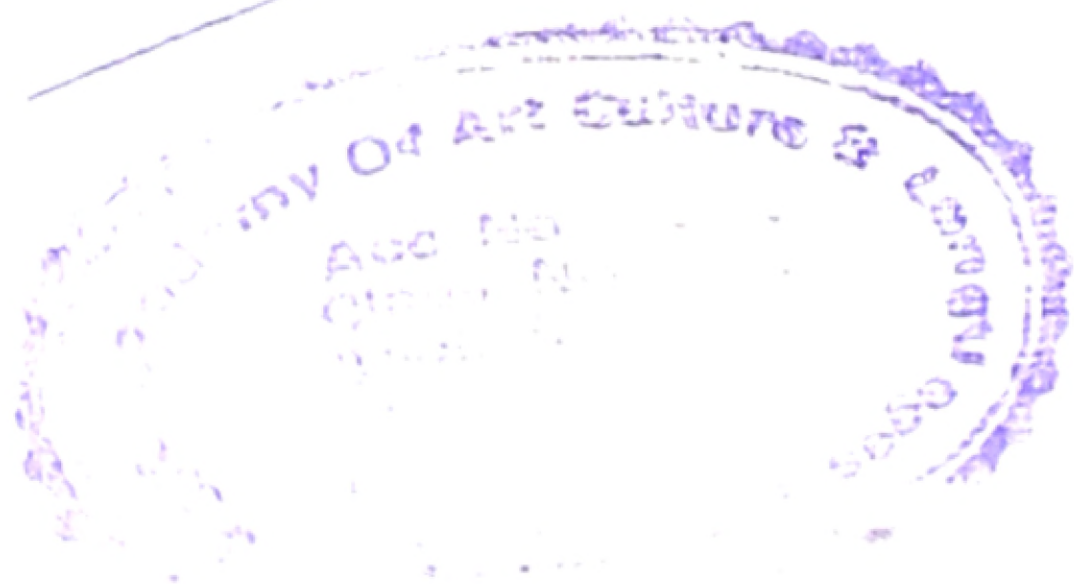
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STALKING IN THE HIMALAYAS
AND NORTHERN INDIA

Widener Academy



PREFACE

THIS book has been written for the man of moderate means, and with the intention of showing that the camera and the rifle are not incompatible companions of a hunting trip.

It cannot be expected that the opinions expressed in it will all meet with general agreement ; but it is hoped that it will at least indicate a way by which good sport may continue for many a long year, and much big game be saved from extermination.

The telephotos of living animals, not one of which has been taken from a hide, are intended to give some idea of the country they inhabit and the circumstances under which a sportsman is likely to see them ; also to draw attention to the very interesting forms of animal life to be met with round camp and on the march.

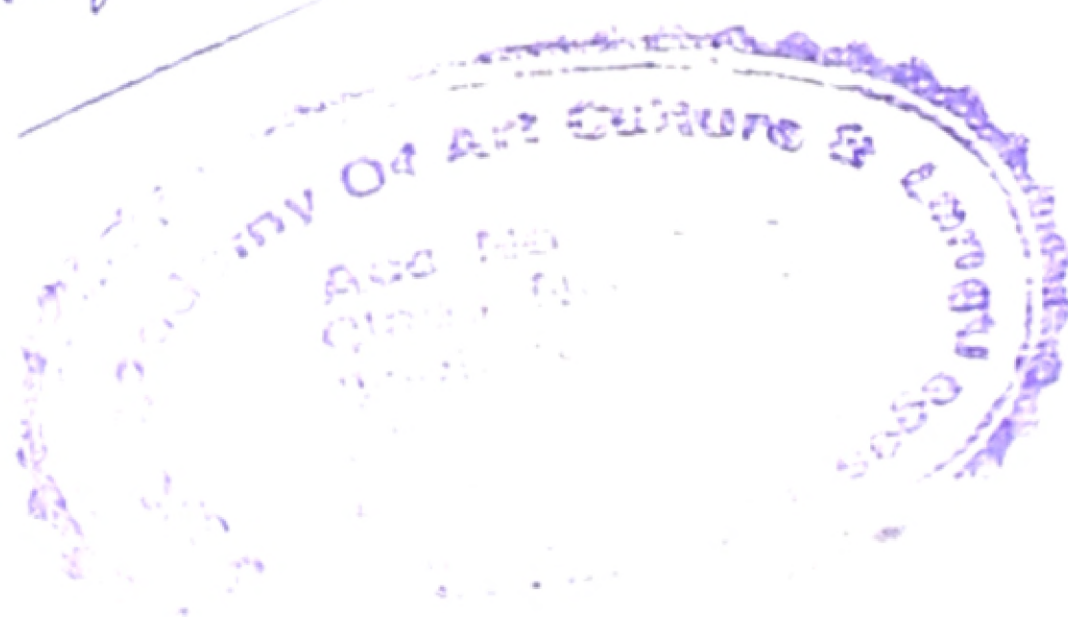
For want of a little more photographic knowledge and experience many good chances were lost in my early days of camera stalking, and my indifferent efforts are there to prove that much better pictures are obtainable.

Many of these photographs have appeared in the *Field, Game and Gun*, *The Illustrated Weekly of India*, and *India*, and my thanks are due to the Editors.

Nyeri, Kenya,

May 5th, 1936.

Cultural Academy



CHAPTER I

WHAT IS STALKING ?

THAT friend of our boyhood, Euclid, began his imperishable work with definitions, and we cannot do better than follow his example.

What is "stalking" ?

Stalking is getting on foot within shooting or photographing distance of an animal first discovered by eye, making use only of natural cover, and without artificial aid. "Shooting distance" meaning such distance that will almost certainly ensure a clean kill.

This, it will be seen, excludes the use of motor car, elephant, cart or boat, or dressing up in native clothes ; the employment of such adventitious aids destroying a true conception of sport, as making the approach too easy by abusing the confidence of the game.

Herein lies the essence of sport, in the means employed to gain one's end. It must not be too easy and the game must have a fair chance. Equally, to obtain real sport, the vigour, nerve and intelligence used must be one's own : by merely following at the heels of a hired ghillie or shikari no man can experience the joy of achievement which comes from defeating a wary old beast on his own ground. Not that a fair partnership with the ghillie or shikari is to be despised, far from it ; for few can learn the lessons of the wild from books, and it is from such men that one acquires the knowledge which eventually leads to sole conquest of a worthy antagonist, by means worthy of the trophy.

Results do not necessarily count. An inch or two in length

of horn or skin is a despicable criterion of the pleasure of conquest ; the trophy should be but the warranty of success by fair means, taken from the oldest and finest beast because therefore more difficult to acquire ; a memento of hours or days of hard work, culminating in triumph, which will last as long as memory does, to brighten our moments of leisure and retrospection.

I would place tracking on an equal plane of sport with stalking, but beating and sitting-up are not in the same category. To take the analogy of fishing ; tracking and stalking may be graded with fair methods of rod and line, while beating is equivalent to netting, and sitting-up to night-lining.

Let us qualify this seeming condemnation of beating as a whole. In this case is meant the employment of many coolies and stops whose unbroken line drives an animal to the hunter or hunters, safely ensconced in machans. The marking down of an animal after two or three days' careful work, with perhaps but a glimpse of hide or horn, or even no more than fresh tracks to show his ways and place of harbourage ; then the silent placing of eight to a score of men, who stroll through the jungle chatting and tapping trees ; so that the quarry shifts by his accustomed path in disgust at the disturbance of his quiet, and crowns careful planning by falling to a well-placed bullet, hardly knowing that he has been hurt : that is sport.

Sitting-up at night is hardly ever sport : only where a man-eater is concerned, and even then it may be mere destruction.

To those who say that in many places tiger cannot be got by any other means, reply can be made that they can leave such tigers alone (always excepting the man-eater) and go and stalk antelope or gazelle : they furnish real sport.

Why single out tigers for destruction whenever found ? They are fine beasts, rarely harmful when unattacked : the trophy does not constitute the sport.

To take again the analogy of fishing. Pike are a pest in many waters, and have to be netted out, night-lined or caught

with trimmers ; but in many other waters they provide fine sport to fair fishing.

And the joys of stalking ! The patient search. The sighting of a herd, and anxious examination for a good head. Then planning the approach with its resultant long detour, or uphill grind, with perhaps a precipice to cross which tries every nerve and muscle. Then the final crawl in and press of trigger, which gives a fine head for the wall or a priceless photograph ; either of them a joy for future years. Sport which does a man good in mind and body.

Camera stalking is the more difficult, and therefore the finer sport, as it necessitates a closer approach, and getting a good picture depends on weather and light to a degree where shooting is not affected. Even when the trigger has been pressed there is no certainty that a picture has been obtained. Camera movement, or a mistake in focusing, may ruin definition ; fogging through a faulty slide may blacken half the negative ; dirt, heat, cold, all have their possible say in the matter.

The camera has advantages over the rifle other than providing finer sport. Its trophies are not so bulky and are much more permanent, not being subject to the ravages of insect pests. The bulk of mounted trophies is often a sore strain on a poor man's pocket, and precious results of glorious days on hill or plain have to be given to messes or museums whenever a move of house is made.

The camera also is free from that curse of all good sport — the craze for records and big measurements. It gives rise to none of that pot-hunting spirit which turns the pleasure of some men in their bags, and the enjoyment they have had in making them, to dust and ashes ; just because their neighbours' trophies are an inch or two longer.

In expense there is little in it. The photographic outfit will cost the same as a couple of rifles : it is just as easy to spend money on either, and the minimum expenditure is about the same.

The cost of plates, chemicals, etc., is about equal to that of cartridges and accessories, and the rest of the outfit and the travelling expenses are the same : only on licences does the photographer save his money.

The scientific hobby of flashlight photography has no place in this book. It is not a sport, in that the woodcraft used is closely akin to that of trapping, while the photographer often does not see his subject. It produces beautiful results in the matter of detail, but the lighting is unnatural and the surroundings are not shown, while it teaches us nothing of the animals' habits.

I may say here, that since I have taken up camera stalking, I have learnt much about animals in one year that I never acquired in thirty years of shooting. To get a good picture one has often to wait a long time after getting within range. It is no use taking an animal tail on, or with its head in a bush, or with branches or grass obscuring much of its shape. Then, after the first dark slide has had its two exposures and a change is made to the second, one waits for other—possibly better—pictures or tries to get a little closer if the opening pair have been taken at a distance. In the hour or two which may be spent watching the subject with concentrated interest, many little tricks and ways of the animal reveal themselves : its choice of plants and method of feeding, the particular points of danger which are carefully watched and, in a herd, the sequence of sentry duty.

I feel sure that very soon sporting ethics will limit beating to under a score of coolies, and that sitting-up, except for declared pests, will be abandoned : also that what ethics demand the law will shortly enforce, in order to save the game. That the sportsman would then be limited to stalking, tracking and still-hunting would certainly be all the better for the game and for sport.

There will still remain the journey to the hunting ground, with its ever-growing hopes and anticipations : the joy of camp life, temporarily free of telegrams and letters, typewriters,

telephones, and motor-horns, with other curses of civilization. Then there is the daily growth of new senses, or enhancement of those already there. The eyesight becomes keener, so that the motionless chital standing in patchy sunlight under golden bamboos, invisible the first few days, stands out clear and sharp ; or the herd of bharal—blue sheep amongst blue shale—is spotted a mile away by some slight movement of an individual ram.

Hearing is perhaps the sense which develops to the greatest extent. At first the wild seems almost silent, the ear being accustomed to such gross noises as the shriek of a railway whistle, the rising growl of starting motors, or the clamour of a jazz band. Then the sportsman becomes dimly aware of a medley of many noises. A month later and he can sort them out almost automatically ; so that the tread of an animal on dry leaves, or the half-heard distant call of a Kashmir stag puts him instantly on the alert, and he realizes that “ Stand and listen ! ” is frequently almost as imperative a maxim as “ Sit down often and watch.” But by then he should have realized the value of working ground carefully and thoroughly.

First impressions are often fallacious and vary with the individual. My wife, when on her first trip, being shown a herd of thirteen wild yak, to my chagrin evinced little interest in a spectacle which I had never enjoyed before. Later she explained that she expected to see such sights quite commonly, and not even polar bears would have surprised her. Since then she has seen some thirty species of Indian big game, and her interest has deepened with every experience. Again, on my first trip to Kashmir, one of eight months in 1905, I sent back my shikari and went on up the Shyok, crossing during one march a most unpleasant *parri*, or precipice. It was so unpleasant that, halfway across, I was minded to take off my boots and climb in my socks, but could find no room to carry out the operation. Mindful of photographs I had seen of climbers projecting from vertical cliffs at appalling angles, I took this as part of the day’s work, and merely supposed (with

some shame) that my beaded brow was evidence that my nerves were not as good as they ought to be. Three years later a world-famous climber passed that way and described that *parri* as "the worst he had ever crossed."

I no longer blamed my nerves, but, if I did not like a bad place, took an easier way round, if there were one ; or crossed it unashamed dislike if there were not. That first trip taught me a lot, but I did not enjoy it as much as acquired knowledge has enabled me to enjoy many subsequent journeys ; so go and do it again, beginner.

Of stalking in the hills and plains there can be little comparison ; for who would stay in the plains when he can get to the hills, while the hills provide more difficulties to overcome, and an interval between plan and execution which lasts for hours or even days instead of the shortened pleasure of a stalk in the plains. But we cannot all get to the hills, while cold weather stalking in the plains provides much pleasant relief from parade ground or office ; so we take what we can get, and enjoy the best available.

Camera stalking in the plains has one advantage over the same in the hills, as the light is nearly always better. The animal has a passion for the shade, as its chief means of concealment while feeding, and for early or late hours while doing so. The consequence is that lighting and contrast in the resulting photographs suffer badly. In Kashmir in March, April and May, 1934, I never once succeeded in getting a photograph in sunlight : the consequence being slow exposures and added danger of camera movement.

In the plains the animals have not usually this distaste for early or late sunlight, in the cold weather at any rate, and results are easier to obtain, as a fast exposure can be used. Against this may be put the handicap of undergrowth, which is usually sadly in evidence, and a blade of grass a yard high can easily spoil a picture. But difficulties and disappointments are there to be overcome.

Whatever the luck may hold it is not only weak but foolish

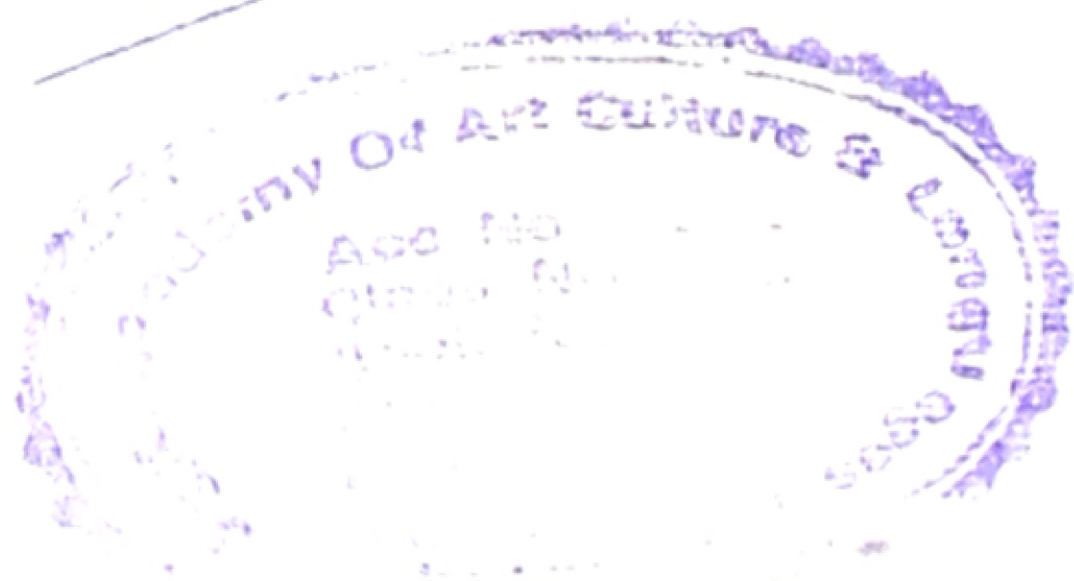


A DESERT GERBILLE



INDIAN RED-WATTLED PLOVERS OR "DID-HE-DO-IT'S"

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to give way. Should that watchful ewe, whose baneful presence prevents one getting within fair distance of the big head, irritate one into taking a long shot instead of going home and trying another day, even if the shot be successful the trophy will afterwards seem a poor thing to any right-minded man ; however much a sycophantic shikari may praise his shooting. As far as shooting is concerned why not take a match rifle on the range, and shoot at a target which will not suffer pain if the bullet is out of place ? A " possible " at long range is much more creditable than risking a long shot at an animal because patience and endurance fail, or you have not got guts enough to try again.

Just as bad is the man who, because the sun is too hot or the climb too long, shoots a head below the local standard and comes back saying that " It was the biggest head I saw." Why shoot at all ? It is not necessary to kill to enjoy sport, and that young buck was essential to the healthy continuance of his species : for it is males just reaching their prime which maintain the stock in numbers and in fertility. The old males provide the sport and their removal does no harm, so why murder the young herd animal.

It should be remembered that " local standard " is the most important factor. A 20-inch blackbuck in Southern India is every bit as good as a 25-inch in Patiala ; a 30-inch chital in Kanara equals a 34-inch in Kheri ; and a 40-inch ibex in Chamba is better than a 45-inch from Baltistan.

Recently that very fine sportsman the Maharaja of Jind fined his fourteen-year-old son Rs. 10 of his pocket money for shooting a 24-inch blackbuck, because it was an inch below his previous best. It will be noted that the record blackbuck comes from Jind State, and the fine was not because the buck was unshootable, but to teach the lad that quality and not quantity is the criterion of all sport.

The beginner is bound to make mistakes, though he has less excuse now than he had thirty years ago, for books, photographs and trophies abound to show him what is shootable and

what is not. Well do I remember my first oorial. I had gone to the Salt Range for a Christmas shoot, a subaltern of less than three years' service, never having seen an oorial in the flesh, and my only guide the illustration of a mounted head in Kinloch's fine book on big game shooting. My first morning on the hill a ram came trotting along the further slope of a ravine, about 180 yards away, and halted to gaze. I asked the shikari if it were a good one, and he replied that it was : afterwards he confessed that he thought I would not hit it. I fired, and the ram rolled down the hill, and we ran across for the *halal* and to view the horns ; the shikari showing a want of enthusiasm which was explained when they were found to measure 18 inches ! I was fool enough to take them back with me to our cantonment, as well as the two good heads which I also bagged, and was unmercifully ragged.

It was a useful lesson, teaching me not to trust shikaris too blindly, and to study my animal before I set forth to shoot.

It is well for the downcast tyro to remember, however, that the old hand had a beginning, and has almost certainly some mistakes behind him : well-buried skeletons perhaps, but almost certainly there. Such men will sometimes unmercifully condemn a subaltern's honest error ; speaking of him as if he had cheated at cards or embezzled trust funds, yet do a thoroughly unsporting act shortly afterwards—such as doing a junior out of a shooting block by unfair means, or shooting several tigers at night over a kill from the safety of a machan, in order to increase an already considerable total.

Where mistakes are taken as a lesson not to repeat them, they cannot be described as "unsporting," and a man may begin his stalking career at ten or fifty, or any age between, and learn to extract the fullest enjoyment from his sport, while dealing fairly by the game and brother sportsmen.

Even when shooting is the object of the trip, the addition to the outfit of a camera with a telescopic lens is an unending source of pleasure. Not necessarily an expensive long-focus lens, but one which will serve to take pictures of the many

interesting beasts seen around the camp and on the march. Mammals, birds, reptiles, and even insects, provide much good sport of a minor kind, which will fill many an otherwise dull hour and add enormously to the knowledge of the photographer and the interest of the trip.

In the plains the little striped palm squirrels are ever round the camp, " Did-he-do-its " at the nearest patch of water, and the soft-furred little gerbilles a pest in the crops.

In the lower hills the sickle-billed hoopoe probes for insects in the turf round the tents, queer agama lizards scuttle amongst the rocks and cling to the rough trunks of ilex trees, while the great yellow-legged, yellow-headed bearded vulture or lammergeier sails about every cliff on 9-foot spread of wing, and may be stalked as it perches on some crag overlooking its eyrie.

Round the higher camps will be heard the shrill whistle of the orange-bellied, brown marmot, sitting bear-like, upright at the mouth of its hole, great rodent teeth showing, its alarmed curiosity insatiable but ready to dive to safety at the slightest suspicion of enemy movement. A brood of fluffy ducklings of the Ruddy Sheldrake may be found amongst the gorse, magpies are in the willow trees of every village, and queer little dark-grey lizards with bodies like flattened golf-balls bask on stony hillsides.

Every camp has its group of hangers-on from the animal world, and every one provides matter for an interesting picture, often to be got by merely sitting quiet, camera trained on the animal's home ; or merely by walking slowly past, never looking directly at the bird or beast, and focusing while passing.

There is not a minute of daylight that cannot be pleasurably filled and imperishable records made of the glorious scenery, friendly humans, and smaller forms of animal life, all of which together make the memory of the trip an everlasting delight.

CHAPTER II

OUTFIT

FIRST in the equipment for stalking comes the vexed question of the rifle.

What is wanted is one of sufficiently flat trajectory to make fairly certain of a well-placed bullet up to 150 yards—the limit of sporting range. At the same time it should be capable of stopping a wounded bear at close range.

At first sight it would seem that the highest velocity available is desirable, but when practical experience has been obtained it will be found that a bullet fired from a rifle with a muzzle velocity of over 2,600 feet per second, is liable to behave extremely erratically on impact with living flesh and bone. It may be most efficient at over 100 yards but under that, an expanding bullet is too weak to stand the shock of impact and flies to pieces, with a consequent loss of penetration which may be extremely dangerous.

At any time one may wish to use the stalking rifle for sport in thick cover, where 80 yards is probably the maximum range, and 40 yards the average. Being a poor man I had to use one rifle for all purposes when I began shooting, and found that accurate placing of the bullet more than compensated for reduction in weight ; killing many species of big game with a single shot from rifles up to and under .355 and losing remarkably few. As the “ magnum ” rifles came in I took to a .280 Ross, the muzzle velocity being 2,900 feet per second, and was very successful with it until an accidental meeting with a tiger in Siam, which tried to take my dog off the path in front of me. I fired two soft-nosed bullets at 23 and 3 yards,

the first penetrating about 5 inches into the chest, the second about $3\frac{1}{2}$ inches at the back of the shoulder-blade. The bullets smashed into minute fragments, and while the first did break up the big blood vessels which lie just behind the breast-bone, the second merely made a bad surface wound, though it knocked the tiger down by force of impact. He carried on past me into thick cover and died 100 yards away. It was particularly noticeable that the penetration was much less with the bullet fired at the closer range.

There is a very great difference between going out after a dangerous animal, retaining the initiative, and an accidental meeting of this kind, which would not probably recur in several lifetimes, and I was merely carrying a .280 Ross in hopes of a deer for dinner, a .318 being my normal weapon. But the inefficiency of the bullet at close quarters was so marked, and the experience so unpleasant, that I have not again used a .280, except on one occasion after markhor.

I am also quite convinced that all copper-pointed hollow-nosed bullets, and "split" bullets are dangerous in the extreme, for the same reason; even from rifles of much lower velocity, and that the "soft-nosed," with a solid lead tip, is efficient for all purposes.

In January, 1930, I had another unpleasant experience with a big tiger on foot in a North Kheri marsh. I was using copper-pointed, hollow-nosed bullets, sent to me by a gun merchant because he was out of stock of soft-nosed, and I had completely run out of the latter. Two well-placed bullets at 60 and 30 yards failed to penetrate sufficiently to do their job properly. In contrast to this, I fired a soft-nosed .318 bullet at a Kashmir stag standing facing me at 70 yards. It went through the centre of his chest, and I picked it out, nicely mushroomed, from under the skin of his right hip. A Kashmir stag has as big a body as a tiger.

I have, on two occasions in Kashmir, had to take on a wounded black bear at under 5 yards range, and the soft-nosed .318 bullet has finished the job most efficiently.

I have had several complaints of rifle bullets with a higher velocity than the .318, and until it is proved to me that there is sufficient reliance to be placed on their behaviour at close range, I shall stick to the .318 and advise other people to use a rifle of similar velocity and weight of bullet, 250 grains, if they cannot afford an additional heavier rifle for forest shooting where dangerous game may be met.

The trajectory of such rifles is quite flat enough to enable any man of normal eyesight to place his shot well up to 150 yards. Longer shots are quite unnecessary, except to stop a wounded animal, and 95 per cent of misses are due to human error and are nothing whatever to do with the rifle.

Of such human errors the commonest are shooting high (particularly downhill or in a bad light), "snatching" instead of pressing the trigger by squeezing with the whole hand, and shakiness, most often due to failing to rest at the end of a tiring stalk before taking the shot.

This last error is also frequently caused by an excitable shikari communicating his nervousness to an inexperienced shot, and the possibility is ample justification for the shikari being made to stay under cover for the final act; unless the hunter thinks himself unable to pick out the right beast in a herd without the shikari's aid.

It is far better to lose your chance by a little too much deliberation than to miss and destroy your confidence in your rifle: "tailoring" your beast, so that it goes off on three legs, or with a stomach wound, is worse still.

The sighting of a rifle is very important, and is often far from satisfactory when it leaves the makers. Narrow V's to backsight and enormous raised blocks to the foresight are all very well for deliberate shooting at bull's-eyes on a rifle range in good light, but inimical to good shooting in the field.

The whole sighting should be as near flush with the barrel as possible, or eye and hand will not work together. If the V of the backsight is too narrow its definition will be blurred,

often forming a double image. The V should be wide and shallow, giving a view of the whole target, and with a small nick, or silver line, below the centre.

The bead of the foresight should be suited to the individual, but to normal sight one of medium size, ivory-tipped and sloped forward to catch the light, is most suitable. A fine bead is difficult to pick up in a bad light or against an ill-defined target. A coarse bead is suitable for quick shooting at close range, and may well be substituted for the usual foresight if shooting in forest.

A gloaming sight is little use ; it is liable to tempt people to take shots in light too bad for certainty of aim.

Personally, I think a rifle should have only one standing backsight, for 150 yards range, and no extra flaps. The same amount of foresight should always be taken, and the aim directed a little lower if the animal is closer in than 150 yards. The rise of the bullet above the line of sight at 150 yards is so small with modern rifles, that the difference never amounts to aiming below even the smallest beast's body.

“Peep” or “aperture” sights are liked by some, but are unnecessary and unsuited to most. Telescopic sights are easily knocked out of adjustment, unnecessary to normal sight, and unsporting if used over 180 yards.

The rifle should be fitted with a sling for the hills, but I think this unnecessary for the plains.

For the hills, or in rainy weather, a canvas sling case is invaluable.

For cleaning materials the B.S.A. preparations, Safety Paste and Kleenwell Oil are as good as any. A rag slightly smeared with Safety Paste pulled through after firing is an invaluable protection to the barrel if a thorough cleaning cannot be given immediately on return.

Cleaning should be carried out by a preliminary swill through with boiling water, then several flannelette rags pulled through with Kleenwell Oil, followed by a couple of dry ones, and then a light coating of Safety Paste. It is not meant to

be inferred that the above preparations are exclusively recommended, there are plenty of good ones on the market, but they are those that I have used for a good many years and found efficient.

Either do your cleaning yourself or have it done in front of you. Native shikaris are often sketchy or incompetent in their cleaning, and also prone to use an inordinate amount of cleaning material. I have found the breech of my rifle almost choked with cleaning paste, after having had to leave a Kashmiri shikari to it, halfway through cleaning operations.

Inspect your pull-through cords frequently and never risk a worn one, or a broken one jammed in the barrel is a certainty.

Carry a jointed cleaning rod to remove a possible jammed cartridge. Working at it from the breech end is most destructive to the edges of the chamber.

Cartridges should be carried in two small leather pouches, five in each, worn on the belt : a spare packet to be carried in the *havresac*. Twenty may seem a large number to carry, but it is easy to use up a lot on a wounded animal. I once fired thirteen at a bear rolling down a hill, not knowing whether it was alive or dead, and when it brought up against the base of a pine I found eight bullets in it.

The total number of cartridges to be brought on a trip, depends on its intended length, and the amount of game it is hoped will be seen ; but any surplus will keep well, and to exhaust one's supply is a dreadful calamity.

Examine your cartridges before you start on a trip, and make sure they are what you need. In 1933 a sportsman reached his ammon block in Ladakh with two cartridges over from a previous trip : the new supply would not fit his rifle. He fired his two cartridges ineffectually and returned to England with nothing to show for a long and expensive journey.

Field glasses are absolutely essential, and should have good definition and a wide field : $\times 8$ is a sufficient magnification. With a greater magnification the field is reduced, haze and mist are more troublesome, and they are tiring to the eyes.

A telescope is most useful in the hills. An $\times 30$ stalking glass will show the size of a head at 3,000 yards, and save much time and many a weary climb.

A shikar knife, holding two blades, corkscrew and tin-opener, should be worn on the shackle of a broad leather belt.

CLOTHES.—The question of clothes resolves itself into one of comfort and invisibility, bearing in mind that a combination of various shades is far less conspicuous than garments all of the same colour.

In the plains tweeds are out of the question in the hot weather, and the usual substitute, khaki drill, is far from invisible if worn as a complete suit of coat and shorts, or breeches. A sleeveless or short-sleeved coat of a grey-green shikar cloth, with shorts, is a cool and comfortable combination, and very hard to see against most backgrounds.

A khaki flannel shirt, or army "grey-back" is equally good. When faded and much washed the latter makes comfortable wear for very hot weather without any coat, and is inconspicuous, while it is not so liable to damage by thorns, or so expensive to replace, as one of khaki flannel.

Puttees are essential where thorns, burrs or spear-grass are bad, and should not be too stiff or too tight. The light woollen Kashmir puttees fit comfortably, are inexpensive, and do not cramp the muscles. Two pairs of socks, or stockings over thick socks, are advisable.

For the hills, Kashmir tweed, called "puttoo," is invaluable. A suit costs about Rs.20, stands a lot of wear, and is comfortable; also it keeps out a lot of rain before becoming soaked through. The best shade is a brownish-grey, and it is better to have it too light than too dark for wear on hills which are almost invariably littered with grey rocks. Soft leather patches on the elbows, and a double seat add enormously to the life of a suit.

For footgear chaplis are very good in dry weather in the plains or foothills. They should not be nailed for use on oorial or Sind ibex ground, or they will make too much noise. There

are several patterns, and there is not much to choose between them. They should be worn with thin leather socks and both sock and chapli well greased.

Excellent wear for the plains also are rubber-soled canvas stalking-boots. They are cheap, costing about Rs.8 a pair in Calcutta, stand a lot of wear and are noiseless. They give an excellent grip in dry weather, but are useless in wet.

For bad ground in the hills there is nothing like the Kashmiri "grass-rope" shoe. This is made of plaited rice-straw and a thong fits between the big toe and the next one, special socks being worn with them. These socks, an inner pair of wool and a thick outer pair of puttoo, cost about Rs.2 the set and are purchasable anywhere in Srinagar.

A load of rice-straw is carried and the camp coolies make the shoes as they are wanted. They give a grip on anything except thick fallen pine needles, and a safe footwear on that surface has yet to be discovered.

These grass-shoes and socks are excellent wear in any kind of snow, and a preventive of frost-bite.

It is amazing, once confidence is established, what steep slopes can be traversed without fear of a slip, whether the surface be rock, snow or soft earth. Often in other parts of the Himalayas than Kashmir, where these grass-shoes have not been available, one longs for them and the reliance one can place on a foothold, which is sadly wanting without them.

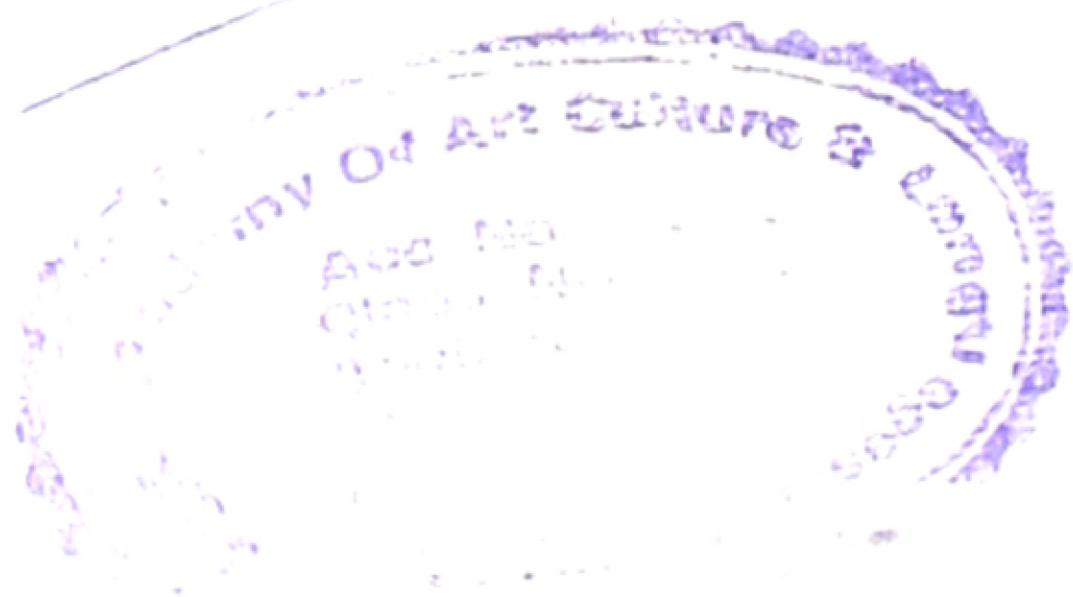
Several patterns of these grass-shoes, made of varying thicknesses of rice-straw, are worn in different parts of the Himalayas, but that of Kashmir is the only one I know which is adaptable to the European foot. The Lahouli wears a particularly graceful grass-shoe : long and narrow, woven of fine straw, and with a projecting toe, but it is impossible wear for the average European.

Headgear is one of the most important items of apparel, as it is the first to come into sight. A topi has to be worn in the plains, and the colour broken up by bits of grass or leaves stuck in the band, or by blotches of green paint. The same



KASHMIRI SHIKARI WEARING GRASS SHOES

Cultural Academy



may be said for the hills, but it is still better to carry a soft hat of grey puttoo, to wear for the final stalk. Only a week before writing this, while photographing two ibex, they stared for a couple of minutes at my puttoo hat, yet failed to connect it with danger and went on feeding: ibex have the keenest sight of any hill animal except the Tibetan gazelle.

In the hills it is imperative to keep warm, and provision must be made for having to stay most of the day on an exposed hill-side in a biting wind. Woollen underclothes are essential, also a woollen cardigan or pullover and a big woollen scarf; the latter long enough for the ends to cross over the chest and tuck under the arms.

Most of us sweat pretty freely when climbing a couple of thousand feet of steep hill-side, and, if one's vest is thoroughly soaked, it is advisable to have another in a *havesac* and change into it if a long wait seems to be impending. Woollen gloves are also useful.

Once again it is essential to keep warm: a bad chill may lead to dysentery, or even pneumonia, and ruin the whole trip.

Next comes the *havesac* and its contents.

The *havesac* itself should be of stout khaki drill, the lower half covered with soft thin leather, and the supporting strap of strong wide khaki tape.

In the *havesac* should be: First Field dressing, skinning knives, measuring tape, spare packet of cartridges, chocolate, toilet-paper. On the person should be a large khaki silk handkerchief, notebook, chocolate, glare-glasses.

Lunch in the shape of "rock cakes" (see Appendix V.), sandwiches, etc., may also be in the *havesac*. It is far better to eat lightly and occasionally when on the hill, when you feel a little hungry, than to fill up with a large lunch at noon, and try to climb on it later; that way lies headache and mountain sickness. In the plains also a bun and a piece of chocolate eaten a couple of hours after starting is a great preventive of possible exhaustion later on.

A strong khud-stick is necessary. This need not be iron-shod, but if it is the tip must be spade-shaped and not pointed. The spade-head gives just as good a grip and is useful for scraping footholds : a point has a knack of slipping into cracks or plunging into deep snow. Iron tips make a lot of noise unless care is taken.

CAMP EQUIPMENT.—The pattern of tent decided on is largely a matter of individual preference, the only essential being that no portion of it should be too heavy for a coolie to carry.

On my first trip to Kashmir, I lived for eight months in a small single-fly tent and had no camp furniture at all ; sleeping on the ground and eating off a yakdan with another as a seat, and having a bath in a hole lined with a ground sheet. I kept very healthy and happy, and my trip was far from costly (as it had to be), owing to the chief expense, that of transport, being reduced to a minimum. Being now more luxuriously minded, I take a full set of camp furniture, and live in a 10-foot by 8-foot double-fly tent with a bathroom attached. Tents should have pockets all along the sides, and ropes to hang towels. The corners should be laced, so that the walls can be rolled up in hot weather. This size makes two coolie loads, with the poles and pegs as part of a third, and is rather large for the hills. One of 8-feet by 8 feet, or 8 feet by 7 feet is amply big enough ; while, though a bathroom is most useful to save the floor of the tent from becoming sodden, and for storing rations, grass-rope, etc., it is unnecessary. The curved surface of a bathroom is, however, most effective in breaking the force of the wind in countries like Ladakh, where wind is the traveller's chief bugbear.

Camp furniture should be of as simple a pattern as possible, and easily repairable in case of breakage. The Elliot camp-bed, and Rurki chair both answer to these specifications. A wooden table, with the legs folding underneath in pairs, is essential if steadiness is needed. There are plenty of simple and efficient camp baths on the market.

For packing one's baggage there is nothing like the yakdan.

There are some enormous leather boxes issued to regimental offices which are called yakdans. They are difficult to pack, immensely heavy and designed apparently for camel transport only.

The yakdan, as made in Peshawar, Rawalpindi and Srinagar is quite different. The first two places produce the best qualities, and they last for many years, but are more expensive than the Srinagar ones, being Rs.10 each against Rs.5.

This rate is for a size of about 24 inches by 15 inches by 8 inches, inside measurements, which I consider the best. At one time I used a pattern 20 inches by 15 inches by 10 inches, which is easier to pack, and also makes a coolie load when filled with stores and clothes in equal proportions ; but it is too high to go under the seat of a railway carriage, and it is awkward to load several at a time on a camel.

Bedding should be carried in a Willesden canvas valise, and should be carefully selected for warmth and lightness. Good blankets, though expensive, are a saving in the end, while a good sleeping-bag is a real economy in the hills. There are several sleeping-bags, designed for climbers, now on the market, which combine warmth and lightness to an amazing degree. Sheets are not necessary in the hills and a mosquito curtain should be taken anywhere that there is likely to be a use for it, or malaria will be an almost certain result of leaving it behind.

One small pillow is sufficient, as spare clothes can be stuffed into the head of the valise, but servants should not be allowed to pack an inordinate amount into it, as they love doing, to save themselves trouble in the early morning. If this is not stopped the valise will assume grossly unwieldy proportions, and be too much for a coolie.

A rubber hot-water bottle is by no means to be despised, and is a great help in case of chill or frost-bite. It also has another use in bread-making, which will be set forth later (Appendix V).

A pair of fur-lined shoes or boots are a godsend in cold weather.

SERVANTS.—It is essential to do one's servants well, especially in cold weather, and their tent should be sufficiently roomy and waterproof.

One's personal servants should have a warm coat, a cardigan and a pair of chaplis.

They should be permitted to take a kit of at least 40 lb. in a really cold country.

Cheap glare-glasses costing 4 to 8 annas a pair should be carried for all personal servants to use in snow. Having once had a touch of snow-blindness myself, I can appreciate this, and their fortitude under this affliction has often roused my greatest sympathy and admiration.

Kitchen gear, which should be frequently inspected, both for cleanliness and for "unofficial" additions, should be as simple as possible. Knives should be selected which can really cut: the cheaper bazaar varieties will not. Avoid aluminium cups. A good thick glass tumbler is pleasant to drink out of, and will last wonderfully well with a little care.

A spring balance, weighing to 60 lb., is a great help, both in making up loads and in checking purchases of supplies.

Lamps are a debatable point. Pressure lamps, burning kerosene oil, are available in several good patterns, and give a very fine light. They add greatly to one's comfort in the plains, but the mantle almost invariably breaks when camp is moved, and they are impossible to repair if they go wrong. Also they must have a good grade of oil. As one usually dines at dusk, and goes to bed very shortly after dinner, a hurricane lamp is sufficient for most. We used pressure lamps for nearly three years but have reverted to the cheap hurricane lamp.

Carry oil in a 2-gallon petrol tin: it is stout, has a screw-cap, and is easy to load.

Other necessities are an axe, a small mattock (Hind. "tesi"), and a spare watch or clock for the kitchen.

Useful luxuries are a Primus stove and a mincing machine.

FOOD.—The question of food is one which needs the most careful consideration. Cutting one's rations, or eating

indigestible country stuff just because one is supposed to be "roughing" it, is foolish in the extreme. Good plain food is almost invariably obtainable, and Indian bearers and cooks can turn out excellent meals under most difficult conditions, especially with a little explanation and encouragement.

Indigestion leads to dysentery, dyspepsia and short-windedness; spoils one's appetite, reduces one's power of resistance to cold and wet, and ruins one's shooting.

It is, of course, necessary at times to live hard, perhaps in bivouac away from the main camp, or when crossing high passes; but to habitually tolerate charred lumps of leathery meat, doughy scones or stale chupatties is idiotic.

With regard to chupatties, these are not suited to the average European stomach, but are very pleasant eaten fresh. A long course of them will probably bring on a bad go of internal trouble.

It is perfectly feasible to make bread anywhere, either wholemeal or all white flour, and a recipe is given in Appendix V. Also one for wholemeal scones, which are excellent, and keep for a long time.

Stores must not be cut too fine, and as much advance information acquired as possible about supplies obtainable in the country to be visited.

Eggs are scarce or unobtainable in most Hindu countries, but can be carried for weeks if smeared with glycerine or buttered.

When a sheep is purchased or game animal shot see it cut up and properly jointed, and allot their respective portions to personal servants or shikaris.

Greenstuff is a great problem, but nowadays in the plains there is usually a bus service on some adjacent main road, which will convey a servant to a market town where purchases may be made. In the hills wild stuff is frequently available, and spinach, turnip-tops or runner beans in the villages. Wild vegetables include spinach, the sponge-like mushroom known as "guchi" (very good indeed) and rhubarb. This last is very

good in May and June but gets stringy later on, but wild strawberries and raspberries begin in July and are wonderfully plentiful in parts of the Himalayas.

Evaporated fruits should always be carried, the "kumani" or sun-dried apricot being particularly useful and purchasable in any bazaar. Prunes and apple rings make a pleasant change.

Potatoes and onions must usually be carried from the starting-point, though the former are plentiful in many parts of the hills from midsummer on.

Fat for cooking is often a great problem. If your cook is careful he will make 4 lb. of mutton suet last for several weeks, and more will be obtained from sheep purchased after mid-June; before that they are devoid of fat.

Fish are rarely purchasable in the hills, but a rod and some simple tackle will provide many a meal for the whole camp, even if the handler know little more than the elements of angling. I have caught 30 lb. of fish between lunch and tea in the Indus 25 miles above Leh, and nearly 200 fish averaging $\frac{3}{4}$ lb. in four days in the streams at the head of the Pangong Lake: all these being excellent eating. A small piece of liver, or raw meat, drifted over a stony shallow just clear of the bottom, is a most effective bait; while a fly or flyspoon is killing in some streams.

Fresh milk is usually obtainable, but a supply of tinned should be carried. I can strongly recommend the powdered milk called Klim, while a bottle of malted milk is a useful reserve for possible illness.

MEDICINES.—A small medicine chest is invaluable, fitted with a dozen screw-top tabloid holders. Medicines to be carried in this should include quinine hydrochlor, genasprin, salicylate of soda, calomel, Dover's powder, permanganate of potash, boracic powder, bicarbonate of soda. It is also desirable to carry a little tincture of laudanum for sore eyes or snow-blindness, and liquid iodine for toothache, cuts or bruises.

It is most useful to know how to use a hypodermic syringe, and an injection of emetin is often magical in stopping dysen-

tery, while, in case of an accident resulting in broken bones, a shot of morphia is invaluable while repairs are being effected.

Add a tube of Borofax for cuts and sores, Iodex for strains, Epsom salts for the servants, a roll of 1-inch adhesive strapping, bandages and lint, and there is no ordinary illness or accident unprovided for, while the whole outfit will go in a biscuit tin.

The question of doctoring the numerous applicants for medical aid, who inevitably come to camp, is very difficult. It is hard to resist appeals, and while instructions in the use of hot water and clean cloth will do wonders, it is impossible to issue medicine to all. I always try and restrict medical help to those in my immediate employ, and, while it may seem ungenerous to refuse medicine, it must be remembered that many applications are made in the hope of obtaining free pills for indiscriminating use when illness really does come.

It is impossible to give full instructions for skinning in the space of this book : they will be found in my *Big Game Shooting in the Indian Empire* (Constable).

Preservative, alum or (more usefully) arsenical soap, should be carried up to expected requirements.

See Appendices I and II for lists of outfit and stores.

CHAPTER III

THE PHOTOGRAPHIC OUTFIT

THE choice of a camera and lens with which to obtain pictures of animals by stalking, is a very different proposition to selecting one for work in forest, off an elephant or for flashlight photography.

For this last purpose a short-focus lens of large aperture is normally used, and in forest or for taking photographs off an elephant, where the range is rarely as much as 50 yards, a fixed focus telescopic lens of about 12-inch focal length is that approved of by most jungle photographers.

Stalking is a very different proposition, for a range of 50 yards is not only unattainable as a rule, but is often undesirable ; as the protusion of even the top of one's head from behind cover at such a short distance will cause a stampede. Hence the camera stalker has to begin picture-taking where the worker in forest leaves off, and has to select his apparatus accordingly.

It is evident that a greater magnification and, consequently, greater focal length is necessary, and to take photographs up to 120 yards a focal length of about 30 inches is needed. This involves a smaller working aperture, resultant slower exposures, and a larger and more unwieldy camera.

The size and weight of camera and lens is a very serious matter ; for a climb of 300 or 400 feet, carrying the camera slung round one's neck or by the leather handle, such as the finish of a stalk invariably involves, is a most exhausting affair. If the camera I use be slung round the neck by the webbing strap it projects, when the 30-inch lens is mounted in

it, some 14 inches in front when closed, or up to 23 inches when racked out : the lens alone weighs about 4 lb. and the whole thing 9 lb. Clambering round a rock face with this swaying across one's body at every movement, and threatening to throw one off one's balance, is far from amusing and may be extremely dangerous ; while carrying the camera in one hand and placing it on ledges ahead of one is a most laborious business, often productive of clacking noises which alarm the game far more than an avalanche or falling stones.

Weight and size being therefore a serious consideration, it is very advisable to stick to a $\frac{1}{4}$ -plate camera. At first, when taking up camera stalking, I decided on a 5-inch by 4-inch camera, my lens covering that sized plate equally well ; but a little thought convinced me that it would be too bulky, and I bought a $\frac{1}{4}$ -plate Soho reflex, for which decision I often render thanks to heaven. The 5-inch by 4-inch gives a larger picture, but it is rare in the extreme for the whole negative to be used for making an enlargement, and it is quality which tells in a negative, so that the slight increase in the original size is not of very great moment.

To carry the camera in the field I have devised a case made of three-ply, covered with canvas and lined with baize. This takes the camera with the big telescopic lens mounted ready for action, but not racked out. The large leather case supplied with the camera was much too heavy and clumsy to carry on rough ground, and this carrying-case is fitted with two webbing straps to go over the shoulders of the coolie employed, just as with a rucksack. When the camera is wanted the coolie has only to turn his back to the operator, and the camera can be taken out without removing the case from the coolie's back ; the lid being held closed by two straps with quick-release fastenings. It is often necessary to get at the camera very quickly, as when an animal turns up unexpectedly, and it is advisable to drill the coolie once or twice in turning his back and standing still while the camera is being extracted : if this is not done he will inevitably spin round and round,

struggling to remove the whole carrying-case, and much time and muttered bad language will be expended before he can be induced to stand still, while there is little prospect of the camera being ready for action before the beast departs. The case has compartments beside the lens for plate-carriers, film-pack carrier and light-filters.

The great difficulty with the big telephoto lenses is the focusing, and this does not occur with a 12-inch lens, unless the subject is unusually close, as nearly all daylight animal pictures are taken at a distance beyond the "infinity" of the lens. With the big non-fixed-focus lenses the depth of focus is small, and the "infinity" much beyond the normal range at which animal pictures are taken. My lens—a Dallmeyer No. 2 Grandac—which is used at equivalent extensions of 25 inches to 30 inches, has a working aperture of F.10 to F.12 according to extension, the greater extension giving the greater magnification. The greater magnification entails the admission of less light into the camera, and in a bad light it is impossible to define the subject sharply. As nearly all hill animals have a strong partiality for early and late hours and the shady side of a hill, focusing is often a matter of extreme difficulty, and usually impossible to carry out on the ground glass focusing screen at the rear of the camera. This involves focusing in the reflex finder and raising one's head 18 inches above ground level, with the inevitable danger of being seen by the animal.

There are fixed-focus lenses of 17-inch focal length, with a working aperture of F.3.5, but these give too small a picture, and while by the time this appears in print there may be others of 30-inch focal length within the scope of the purse of a man of moderate means, I have not heard of any at present, and must confine myself to the results of my own experiences.

I may say here that I do not consider myself an expert photographer, and it is the recounting of my early errors and difficulties, due to inexperience, which I hope will enable others to avoid them. I fully expect that many better

photographs of hill game than those in this book will appear in the near future.

The great length of lens and hood adds another to the stalker's difficulties, for camera movement is almost certain with any shutter-speed slower than 100th of a second when the camera is slung round the neck and used without a rest, and, even with very fast films of 2000 H & D, this is only usable with the full extension when the subject is in full sunlight. Consequently, where a subject is in shade and slow speeds, such as $\frac{1}{16}$ of a second or "bulb," have to be used, a rest is essential to steady the camera or the picture will be blurred. I have lately, since using the camera in Kenya, devised a metal-pointed stick with a reversed crook, the hollow being downward so as to receive the lens of the camera. The point can be thrust into the ground and a rest obtained which, though far from absolutely satisfactory, will yet often enable a picture to be obtained when the absence of any rest would completely preclude it.

A tripod is quite out of the question, being conspicuous, very slow to set up, and making it impossible to move the camera once in position. It is often necessary to move the camera, and oneself, with the greatest celerity to a new position to obtain a picture, and a tripod would be impossible to shift and set up either on a steep mountain-side or in thick scrub, while the angles at which many pictures of hill animals are taken would be impossible for any tripod. Previous experience in shooting has enabled me to get some pictures, through anticipation of the animals' movements, but in no solitary case could a tripod have been set up and the camera focused with any hope of success. In many cases it has been sufficiently difficult to move myself and the camera into position, and the addition of a tripod would have made it definitely dangerous.

The respective merits of plates and films furnish much food for discussion among photographers, but for stalkers there can be little doubt that it is best to use cut films. Plates are too

fragile to carry on rocky hill-sides, or to transport over country where a yakdan may be bumped hard against a rock by a jibbing pony, or cast violently upon the ground by a frivolous-minded yak brought down from its summer pastures for its first job of work of the year, with resulting ruination to the whole results of the trip. Storage of plates is also a great difficulty, and slotted boxes holding even twenty-five plates apiece add considerably to the bulk and weight of one's baggage. In addition to the supply of cut films a reserve of high-speed film-packs is advisable. They do not produce quite the same high quality negatives as the best cut films, and have the disadvantage of being difficult to develop until the whole pack is used, but they can produce very good negatives and keep longer than high-speed panchro films.

Films have the advantage of being light, practically unbreakable, and easy to handle and store.

They also have the advantage that it is almost impossible to load them into the carrier wrong way round, as they have a nick which, when the sensitized side is facing the operator, is in the right-hand top corner. This advantage may seem to be negligible to those photographers who know only dark rooms and normal temperatures, and have no difficulty in detecting the sensitized side by touch ; but I can assure them that on a freezing day in the hills, or a very hot day in the plains, when struggling with a changing-bag in a tent, one's sense of touch becomes sadly blunted and is not improved by contact with rock or snow when climbing.

A disadvantage of films is the sensitiveness of the gelatine to unduly warm water when developing or washing, and 70° is the highest temperature which can be safely employed without using hardening solution. This point is not sufficiently emphasized by manufacturers, who often merely state that 65° is the ideal temperature for developing and make no mention of the fact that a sudden rise while developing or washing may cause the gelatine of the films to "reticulate" ; forming round, sago-like globules, which make the sensitized

side a network of minute cracks, like a badly-preserved "Old Master."

I had a very fine photograph of chinkara ruined washing, together with three other excellent pictures, by the heat of the sun on the tent raising the temperature of the washing water inside it to 74° : thus an exceptionally successful morning's work was destroyed. Owing to the manufacturers' reticence on the subject I had not provided sufficiently against this danger, and if I had known its extent I should certainly not have begun developing at 10 a.m., although the temperature of the water was then 65° , but would have waited until early next morning, and so finished developing and washing before the sun was too hot. This was in the Punjab in the last week of December, so there is no time of year in India in which this danger has not to be guarded against.

For all work I recommend panchromatic films, as they are highly colour-sensitive, and this makes a great difference in bringing out animals against their background. Animals, especially those which live in the hills, usually fade into their background to an extent which makes the obtaining of a well-defined picture of them very difficult indeed.

Panchromatic films, however, do not keep as well as others not so highly colour-sensitive, and if the trip is to exceed three months it should be started with absolutely fresh films and arrangements made for a fresh supply before the expiration of that period; though this is far more applicable in hot weather than in cold. If there is any chance of the fresh films not arriving, a reserve of "portrait" films should be carried.

The three-months period is based on high-speed films. When I was about to begin animal photography I was advised by a well-known wild-life photographer, whose work is all done in the United Provinces by flashlight and 12-inch lens, never to use a plate or film of higher speed than 500 H & D. He based his advice on the difficulties of excluding light when developing and on the early deterioration of the film. I was going to Siam and Burma and, if I had taken his advice, I

should never have got a photograph at all in dense evergreen jungle ; but, happily remembering previous experiences in those countries when using a hand camera, I took a stock of films and plates of double the speed advised. I lost a good many pictures trying to use the 500 H & D. plates in big forest, but had success with the higher speeds ; then, having a dozen of the latter left over, I exposed them on the last lap of the journey, down-river to Moulmein. I had been warned that they would most probably have slowed down a lot, so doubled my usual exposure and badly over-exposed them, as they had not slowed nearly as much as I had been advised that they would do : so taking into consideration the climate to which they had been subjected for four months, there is no necessity to despair of plates which have been kept a little over the proper length of time. It must be remembered, of course, that these plates were only half the speed of the 2000 H & D which I now use, and a trial exposure or two is always advisable if there is any doubt as to their having possibly deteriorated.

Since that trip I have found that to get a picture on the shady side of a hill within an hour of sunrise, which is the usual problem for a photographer of mountain game, it is essential to use a film or plate of 2000 H & D.

I am pleased to be able to say that, after trying four different makes, two British, one American and one German, one of the British—the Ilford Hypersensitive Panchromatic—best fills my requirements in the matter of speed, fine grain, and keeping qualities ; and have great pleasure in giving this entirely unsolicited testimonial to a British company.

Cut films are loaded into sheaths, which take up the space intended for the thickness of the plate and are placed ready in the carriers, and a changing-bag is essential for the operation. The changing-bag is square, made of black cloth lined with red silk, and has two sleeves for the operator's arms at corners. These short sleeves have each two bands of broad elastic to fit round the wrists, pressing the material close to the skin and

preventing the admission of light. (N.B. I ruined a dozen Sind Ibex pictures by not seeing that these bands were loose and needed renewing.)

This brings us to the carriers. These should be double and the slides of metal, as no wood will stand the constant changes from freezing to hot sun, or from rain to drying wind, which have to be endured in the hills. Metal slides are often made of too soft metal, and are liable to buckle if thrust home in a hurry ; and one often is in a hurry when trying to change carriers rapidly for another picture. Changing carriers should be practised constantly, until it can be done without looking down, and with no visible movement of head or hands, the elbows being kept close to the sides : many a beast will stand staring and give chances for several pictures if no movement is seen. Occasionally a slide will stick and not go right home after making the exposure. This may be due to the catch on the top being slightly bent and lodging on the stud, and can easily be corrected by pressing in the catch. Sometimes it may be caused by the slide having been slightly bent at the bottom and may be corrected by withdrawing the carrier sufficiently to allow the fingertips to be inserted behind, and lightly pressing the end of the slide ; at the same time pressing the top of it with the other hand ; it will probably go home and no more than the extreme edge of the negative be fogged.

To load the carriers, first take out the slides and sheaths and wipe everything clear of dust. Replace the slides, pushing them right home, and re-insert the film-sheaths, leaving about one third of both of them projecting.

Now place the carriers in the changing-bag, on the left side, and the closing slats for their ends close beside them. On the right side of the bag place the box of films, having previously cut the sealing paper.

Put the hands through the sleeves of the changing-bag, making sure that the elastic bands press all folds of cloth close to the forearms so as to prevent the possibility of light entering the bag. Then open the box of films, taking out the whole

dozen and removing the outside, metal-foil wrapping completely. Unfold the paper wrapping of the films, take off the top one and, feeling for the notch, get it into position; holding it always by the edge so as to leave no fingermarks on the surface. Holding the top carrier with the left hand, insert the edges of the film into the grooves at each side of the sheath, by slightly bending then allowing it to straighten, and it can then be easily pushed home to level with the edge of the sheath. Turn over the carrier and repeat the process; push the sheaths home into the carrier, insert the end closing slat, and push in the clips which hold the latter into place. Then place the filled carrier on the far side of the empty ones and fill these in turn.

When all the carriers are loaded, wrap up any remaining films in the black paper and replace in their box, which is usually triple. When taking it out of the changing-bag, write on the outside of the box the number of films remaining in it.

All this may seem rather elementary and unnecessary to practised photographers, but these instructions are just what I failed to discover in any of the four books I bought on photography, and had to learn for myself at the expense of several fogged or scratched negatives. It would often take me twenty minutes to load three or four carriers, when I first tried it in a changing-bag; now I can load half a dozen in five minutes.

We have now got a dozen films loaded in six carriers, and want to try out focusing and exposure.

The rough rule for calculating the exposure with a telephoto lens is, when compared with an ordinary hand camera and a film of the same speed, the exposure is as the square of the magnification. Thus a telephoto lens magnifying twice would need four times the exposure of an ordinary lens using the same aperture and film.

The difficulty of focusing in a poor light has already been alluded to, but it has not been pointed out that the smallness of the field of a high magnification lens often renders it very difficult to pick up the subject on the focusing screen. If

above or below one it is always better to allow a rather steeper angle of inclination to the camera than you think sufficient. It will even then be very often found that the angle is not enough.

Focus finally with the lens screw, not with the extension screw of the camera, and, having got something in a good light in sharp focus, pick up some conspicuous object near the subject and, having got that sharp, swing on to the subject itself.

All this sounds difficult and rather discouraging, but practice speeds up matters in the most amazing way. I reckon that I can now get a picture in about one-tenth of the time that it took me a year ago, and with at least three times the probability of a good result ; while I can now get a picture under conditions which I would never then have attempted, as being quite hopeless.

Exposure must be judged after much preliminary experiment, and an exposure meter is usually quite useless, as there is so seldom time to use it.

A golden rule is to use open aperture and the fastest exposure likely to give a good result when making the first shot ; then set the shutter to a slower speed and stop down for subsequent exposures. It is then possible, if the light deteriorates through a cloud coming over the sun, or the animal moving into the shade, to use the slower exposure with open aperture without having to re-set the shutter. To re-set the shutter the eyes have to be taken off the subject, whereas it is easy to push back the stop without ceasing to watch the animal.

As has already been pointed out, most stalking pictures are got in a light so indifferent as to necessitate the use of the slowest " instantaneous " exposure to which the shutter can be set, usually $\frac{1}{8}$ of a second in reflex cameras.

Animals grazing are useful for experiment, and I would strongly recommend the exposure of a dozen films on similar subjects in varying conditions of light, before any attempt is

made to photograph wild animals. This is the only way to accustom oneself to judging the necessary exposure.

First and foremost expose for definition of the subject and with no thought to the surroundings : these will come of themselves. Even if the subjects be in bright light, it is only about once in three times that they are lighted from the right direction, and then only will the side nearest the camera be properly lighted. If the negative is under-exposed, the animals will look like dark silhouettes against their background, with no detail to be seen.

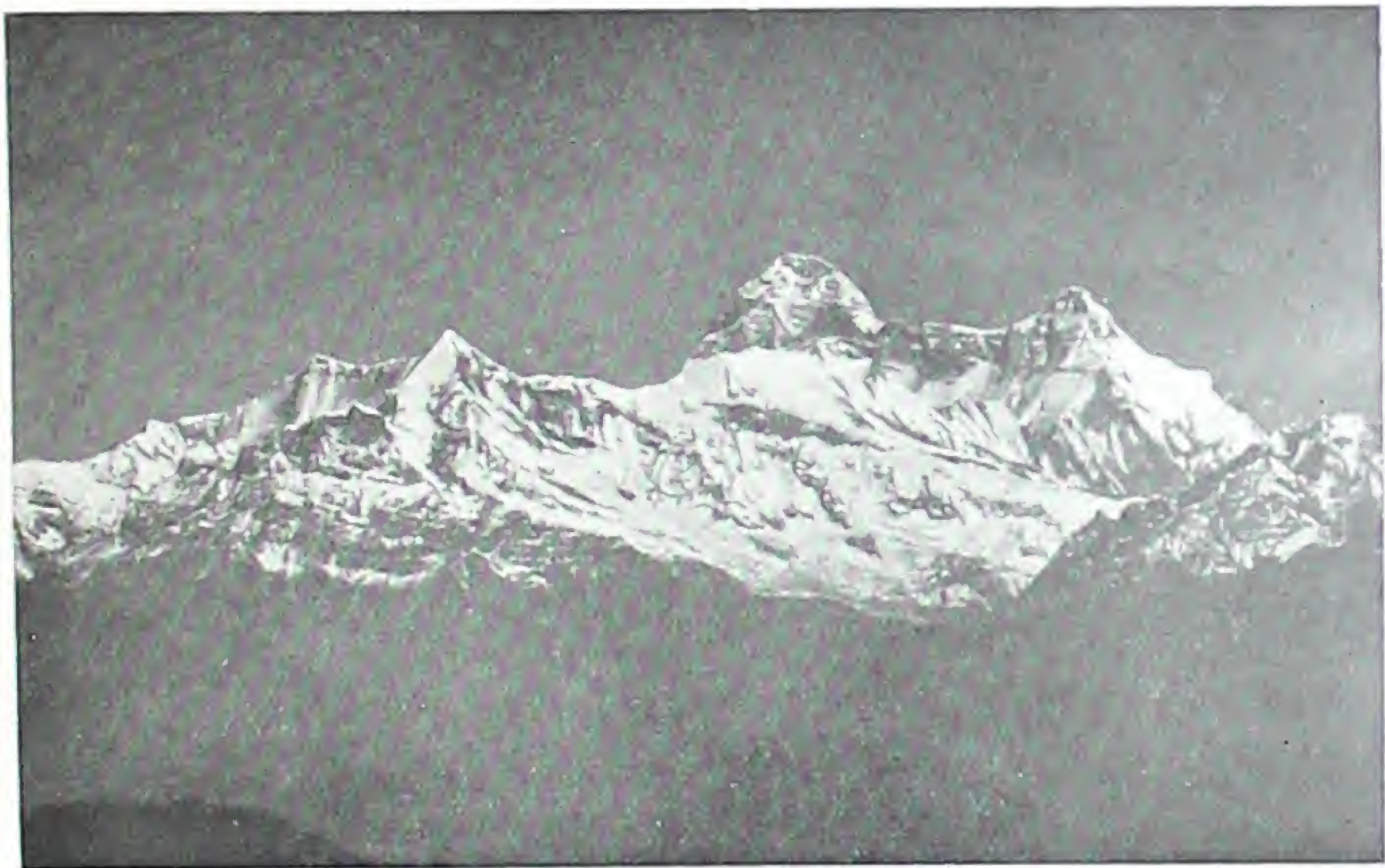
Pictures of scenery, of course, present little difficulty, as it is usually possible to choose one's time, and a rest for the camera can easily be found : there is no fear of the view running away. Half the exposure used for animals will usually be ample.

In photographing scenery the very best results are obtained by stopping down, using a light filter and a long exposure. The K3 filter of the Wratten series, or equivalent of other makes, is the best for pictures of snow mountains.

Infra-red plates and films would seem to be of little practical use at present to the Himalayan photographer, as they need too long an exposure, with consequent danger of camera movement due to high winds usually prevalent in the mountains ; and they give incorrect colour values, all greens appearing white. I have succeeded in obtaining excellent results with ordinary panchromatic plates at 70 to 100 miles, and it would seem unnecessary to use infra-red in their present state of development.

It is essential to use the tank method of development in camp, as, not only is a dark-room tent cumbersome and difficult to keep in good repair, but panchromatic films have to be handled in complete darkness. The method of development in a tank is much the most scientific and productive of the best results.

There are plenty of developing tanks on the market, but, when choosing one, certain requirements must be considered

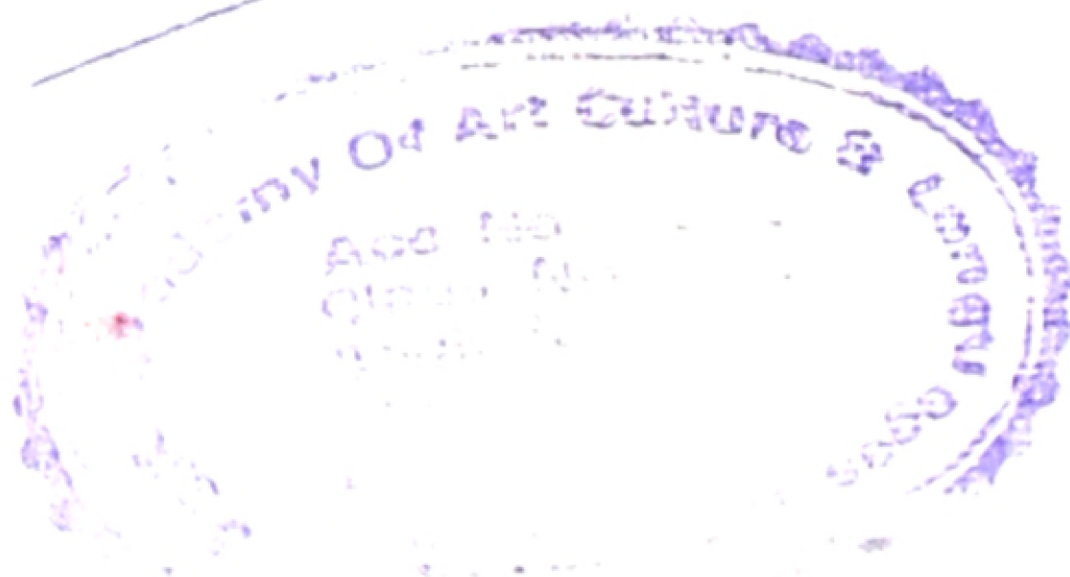


NANDA DEVI, 25,640 FEET, THE HIGHEST MOUNTAIN IN BRITISH TERRITORY
 Photographed from 70 miles south with a 30" lens



TRISUL, NANDA DEVI AND NANDA KOT
 From the same spot with a 12" lens

Cultural Academy



for its use in camp and in a changing-bag. The film-holders should not let the film slip out when soaked in the developer, or it will slip on to the film below it and prevent the developer reaching it. The rack containing the film-holders must be capable of being turned horizontally, so that a small number of films can be developed without the tank having to be filled to the top with developer, which is wasteful. Some patterns have a large lock-over clip on the rack, which may be very nice for use in a dark room to keep the careless from sliding their negatives out of the rack on to the floor, but it makes the rack impossible to use in a changing-bag.

In all the directions I have read on the subject of tank development it has always been stated that it is only necessary to turn the tank upside down once or twice during the period of immersement to ensure an even density of development. I have found that this is wide of the mark, especially at very low temperatures, and had several negatives ruined by insufficient movement of the developer. To avoid this I now keep the tank rocking throughout the period of development.

After much experiment with various developers I now use Tabloid chemicals, and find Burroughs, Wellcome & Co.'s "Rytol" consistently satisfactory. I may say here that this firm's "Wellcome Calculator," which contains the exposure and developing factor of nearly every known make of film, together with much other useful information, is a most desirable addition to the camp photographic outfit.

The question of water for developing, fixing and washing is often very difficult. Frequently it is essential to see what results have been obtained after the exposure of several films, and development cannot be postponed for more than 24 hours: yet water may be scanty or dirty, or only available at a safe temperature very early in the morning.

When trying for Sind ibex, our water had to be brought from six miles away, and was too hot to use until it had been stored in a small tank for the night. Even then, once the sun got on the tent, the temperature inside rose so rapidly

that liquid hardener had to be used. Then the amount of water available was so scanty that Hypo Eliminator had to be used to economize washing, and neither of these chemicals improve negatives and may have a really detrimental effect.

Then water may be dirty and, while it is possible to precipitate mud and sand by working a chunk of alum round and round in a bucket, it seems impossible to get rid of small particles of vegetation.

In the swamps of North Kheri, on the Nepal border, and in other places where our water passed through much decaying vegetation, even straining it through double towels failed to remove all harmful particles, and "pin-holes" appeared in negatives even when the water used appeared to be quite clean.

If the water is too cold it is advisable to raise the temperature with warm water from the kitchen fire, or uneven development is probable. Most Himalayan streams have a temperature of 40° , or lower in the spring, when one is camped near big game ground.

The fixing and washing water must be kept at the same temperature, and a couple of buckets prepared in readiness before beginning to develop. A dark-room thermometer, to test the temperature of the water, is needed; and an ordinary bathroom thermometer is useful to ascertain that of the outer air and consequent tendency to change in the solutions.

For use in placing the exposed films in the developing tank a special changing-bag may be kept, or one sleeve of that used for loading films may be enlarged sufficiently to allow the tank to be inserted into the bag.

The order of procedure when developing is as follows:

Get two buckets of water, at the right temperature, and place in the shade if the sun is very hot.

Using an aluminium graduated pint measure, pour the requisite number of ounces of water into the tank, having first taken out the negative rack.

Take the required number of developer tabloids from the bottles (re-corking immediately) and drop them into a good

thick tumbler. Fill the tumbler from the tank, and break up the tabloids with a xylonite rod, periodically pouring part of the resulting solution into the tank and refilling the glass from it, until the tabloids are completely dissolved and the whole amount of developer is ready in the tank.

Look up the developing factor of the particular film in use and ascertain the time necessary for development. E.g., With one pair of "Rytol" tabloids per 8 oz. of water at 65° F, the time for development of most high-speed panchromatic films is 22 minutes. To ensure a little stronger contrast I usually give 25 minutes.

Put the changing-bag flat on the table, sleeves toward you, and insert the tank ; placing it in the far left corner and its lid to the right of it.

Having removed any unwanted negative holders from the top of the rack, pull out the remainder so that they project rather more than an inch ; then place the rack in the bag in front of the tank, the open ends of the holders to the right.

Next put in the carriers containing the exposed films, placing them on the right side of the bag and all is ready.

Hook up the elastic bands and insert the hands, as when loading films.

Pick up the top carrier with the right hand, undo the catches and take out the end slat with the left, then tap the corner of the carrier sharply on the table and the films will slide out sufficiently to be withdrawn.

Insert the first in the top frame, guiding it with the left hand, then push home the frame into the rack and fill succeeding ones in the same way, pushing each home as it is filled. As each carrier is emptied place it just beyond the remaining full ones.

When all the film holders are filled, lift the rack and drop it gently into the tank, put on the lid, securing the side catches, and withdraw the tank from the bag, noting the time.

There is always some servant ready to undertake the peaceful job of rocking the tank, and, as he is told to sit in

the shade when it is hot or in the sun when it is cold, and it secures him from having any other work to do for half an hour, there is usually competition for the honour.

While he is rocking, mix the fixing solution in a degchi or basin, shaking the acid fixing salt gradually into the water and stirring well with a xylonite rod to avoid lumps.

When time is up, unscrew the cap of the tank and pour out the developer; pour in sufficient water to cover the negatives, rock gently three or four times and, having poured out the water, pour in the fixing solution through the cap orifice. No light must reach the negatives until fixing is well advanced. The negatives will take seven to ten minutes to clear, and the lid may then be removed to inspect results. Throw out the obvious duds, and replace the rack in the fixing solution for another half-hour.

To wash the films, after throwing away the fixer, swill them two or three times with the pint measure, then fill the tank with clean water and replace the rack so that the negatives are vertical. Swill them with the water in the tank every six or eight minutes, making eight to ten changes of water in all. Twice during the washing wipe the films with soft wet cloth or fine sponge.

Do not try a short cut, by placing the negatives to wash suspended in a stream. They will inevitably pick up fine particles of sand and grit, which will imbed themselves in the gelatine or sensitized face and ruin the picture.

When drying, space out the negatives in the rack as much as possible, to allow free passage of air, and hang up in the shade; outside, if free from fear of dust, or from the ridge pole inside the tent. It may be feasible to hang them, by spring clips, on a cord stretched across the tent, and they will dry much quicker thus than in the rack. Even in the tent they may not be safe from dust, and I have bitter memories of hanging up a rack of good negatives and the sudden arrival of a dust-devil five minutes later, which ruined the lot and almost took the tent in its stride.

It is usually easy to pick out a good negative at the first inspection, but the possibilities of some are not apparent until they dry, and inspection with a reading-glass is most advisable before final rejection of any doubtful specimens.

They should be stored in negative albums, properly listed, as soon as they are dry, and prints and enlargements made on return to civilization.

It is very rarely that the whole of a negative is used in enlarging ; and, to mark off the portion wanted, the best thing to use is the " White Ink " employed for writing up titles in albums on dark paper. The desired area of the negative should be marked off with dotted lines on the glossy side of the film, as it can be washed off subsequently. The point of a small feather is useful to do the marking, and, if there is any doubt as to the proportions of the part of the negative to be used, it is best to mark off a slightly larger area than may be wanted : fresh lines can always be drawn inside this, but, if it has to be extended, it is a nuisance having to wash the negative again.

Dust is a constant enemy of photographers, and lenses and mirror should be cleaned frequently, not forgetting the ground glass focusing screen. Great care should be taken to see that the focal plane shutter is not kept set too long, or the torsion of the spring will weaken and timing become incorrect. The camera should be looked at after every stalk, to see that the shutter has been released and the mirror is up.

It is also advisable to have a look at the bellows now and then, as they are liable to wear through at the corners.

The big game photographer's camera has a hard life, and defects occurring through want of care are almost impossible to repair in camp.

(For list of photographic outfit, see Appendix II.)

CHAPTER IV

CAMP PERSONNEL AND GETTING TO THE SHOOTING GROUND

THE considerations governing the choice of a hunting ground are, for most of us in India, the amount of leave available and the cost of getting there.

It is a great mistake to try and go too far for the time available, and in no case should the marching days exceed the hunting days in number. Also very hard marching often ruins the pleasure of a trip, and most men are not too fit when they first come up to the hills in the hot weather; so that gradual acclimatization is advisable before double marches over rough tracks, or stiff climbs at high altitudes, are undertaken. It is no use getting to Skardu over the Deosai in a week, instead of the normal ten days from Srinagar, if several days have then to be spent recovering from the effects, as sometimes happens.

Stalking is only carried out in the plains and foothills from October to April, as, during the remaining months, deer are hornless and it is too hot to pursue antelope on shadeless plains. I have stalked oorial in the latter half of September in the Punjab Salt Range, but found the ravines so stiflingly hot that climbing steep slopes was too exhausting to allow any pleasure to be derived from the sport, while sandflies were a perfect curse, allowing no sleep at nights.

The question of cost turns largely on that of transport, as marching is the principal source of expenditure of any trip.

A three-months trip to Changchenmo will cost a great deal more than one to Suru or Kishtwar, purely on account of

transport, and Astor is always expensive as extra coolies have to be taken from the Kashmir Valley. The average all-in cost of a hunting trip in the Himalayas is Rs.500 a month, or Rs.800 for two travelling and shooting together ; though this latter arrangement is not to be recommended, owing to the difficulty of arranging a fair division of sport, when a rifle shot will scare the game for a week. Chamba, Lahoul, Kulu, Spiti, Tehri Gahrwal and Kumaon cost less than this average, but also produce a much less varied game list.

Expenses, of course, are much dependent on individual ideas of the minimum necessary to personal comfort. It is perfectly feasible to do without camp furniture, to use a single-fly light tent, and reduce clothing to one complete change plus socks and handkerchiefs. It is unwise in the extreme to cut down food in either quantity or quality, which does not mean that such luxuries as asparagus cannot be left behind ; but the whole success and pleasure of a trip is largely dependent on one's digestion.

It is also quite possible to dispense with the services of a permanent Kashmiri shikari, depending on village men (on whom the Kashmiri shikari is largely dependent) and travelling with one personal servant as cook, and a couple of camp coolies. I adopted this system on several trips, and found that my sport, my purse, and my general enjoyment all benefited thereby.

In Kulu, Lahoul, Spiti, Gahrwal and Kumaon shikaris will in any case be picked up locally, and it is only in Kashmir and Chamba that the permanent shikari is an institution.

For all shooting grounds but those of Kashmir, the outfit and stores will have to be bought before leaving one's station ; but everything necessary for a trip can be obtained in Srinagar and there, for three months or less, it will pay to hire tents and camp furniture. As more men go to shoot in Kashmir than in all the rest of the Himalayas put together, it will not be out of place here to give a few hints on managing the preliminaries.

There are two routes into Kashmir by motor-road, from Jammu and Rawalpindi, 215 and 196 miles respectively, the latter being the most used. There are also two pack-roads up the Poonch River, which provide excellent mahseer fishing, each about ten marches.

On arrival at Rawalpindi there will be numerous motor touts at the station, and cars waiting outside it. By a little bargaining and an inspection of the waiting cars, particularly the tyres, a reliable car may be hired at a cost of some 35 per cent less than if one were engaged by letter in advance. The cost varies from as low as Rs.40 to Rs.100, though the advertised rates are vastly in excess of even this last sum. Heavy baggage will be sent at from Rs.1 to Rs.3 per maund.

Having got to Srinagar there is accommodation to be had in Nedou's Hotel or in a houseboat, while the arrangements are being made. Most men go to one of the numerous agencies to fit them out, and these will provide a shikari, who may or may not be competent. These agencies are not in the business for their health, and keep motor-firms, leather-workers, general store dealers, tailors and other tradesmen on their list, who provide material for the forthcoming trip. These men, and the shikaris, all pay heavy commissions to the agents and expect to get them back by overcharging the customer ; so it is a great saving to make all one's own arrangements : the initial cost of outfit can be reduced quite 20 per cent by doing this.

If no brother sportsman has already recommended a shikari (by far the soundest method of getting one) there are always plenty of them to be found in Srinagar, and an examination of their chits will usually indicate a reliable man acquainted with the proposed hunting grounds. In any case the Game Warden will always produce a shikari if asked.

The shikari will bring the camp coolies, usually a tiffin coolie and two others.

It is advisable not to make the first trip too ambitious, unless time is no object, but to use it mainly as a basis for

the acquisition of experience for use on future trips, on which the shikari may be dropped and complete independence attained. There are men who do nothing towards the organization of their trip, have no say in where they go to shoot, plod up a hill behind the shikari without taking any active interest in the planning or carrying out of the stalk, and confine their active participation to letting off a shot or shots at the animal indicated by the shikari. What enjoyment such people get out of hill shooting is hard to understand, unless it be that bucking about their trophies on their return satisfies their sporting instincts.

Having engaged a shikari he will try to take his sahib to all his pet tradesmen, from whom he receives a commission ; but be firm and go round the various shops, comparing prices and inspecting the goods offered. In the many years that I have gone to Kashmir I have only found one man who has always given satisfaction—Razaka, the leather-worker, on the Bund, who has provided me with chaplis, grass shoe socks and many other articles for nearly all my trips. With all other Srinagar tradesmen both price and quality have varied to an extent which has necessitated the closest inspection of goods and bills.

If an agency be employed, I would recommend that it be one run by an Englishman : there are several of these and, after experience of the ways of the native firms, which increase one's bills by the addition of a small percentage on every article, and by the introduction of petty items, I am sure it is worth while going to a British agency, if only to ensure a peaceful departure at the end of the trip without a wrangle over every item of the account.

The Kashmir agencies are eternally trying to obtain money in advance and, if there is a final balance in favour of the customer, it is almost impossible to extract the cash from them, and he is pestered to buy Kashmiri goods, at twice the price at which they can be bought in London, up to the amount of the balance.

These Kashmir agencies may do one quite well for the first year, but are sure to show the cloven hoof later on. I employed one of them in 1933, and they did my work very well indeed ; but in 1934, knowing that I was leaving India and no more custom was to be expected, this same firm neglected my interests in every way and added 20 per cent on to nearly every item in my bill.

Kashmiri shikaris are deservedly unpopular with most Baltis and Ladakhis, who are very good workers and pleasant to deal with, and the Kashmiri is usually at the root of any trouble in camp. Many people are deceived by the plausible ways of the Kashmiri, who has the impertinence to adopt a bluff, country-squire sort of attitude which imposes on the undiscerning. Most of them are poor climbers, liable to lose their heads in an emergency, and physical cowards. They are certain to be grasping in the extreme, ready to cheat any poor villager of a few annas, and almost invariably a perfect pest in one's kitchen, begging for tea, sugar, cocoa or anything else they can scrounge. Their competence in running a camp and knowledge of shooting grounds constitute their claims to employment, and they undoubtedly relieve the sportsman of much trouble, though at a price.

There are good Kashmiri shikaris, who are pleasant to deal with at all times, and the last one I employed, by name Rahim Beg, was of this type, but the vast majority are sycophantic and avaricious frauds.

Chamba shikaris are poor at bandobast, but good stalkers and climbers.

Kulu shikaris are usually moderate in ability and demand high pay, while they will not go more than a couple of marches from their villages.

Lahoulis are not very expert, but are hardy, will go anywhere, and are very keen on a bargain.

In Kumaon and Gahrwal the shikari is almost invariably some villager who has a general idea of where to find game, but no stalking knowledge or ability to run a camp.

The local shikaris in Baltistan and Astor are invariably magnificent climbers, can use glasses and have a fair knowledge of stalking, but they only know the country in the vicinity of their villages.

In Ladakh the local shikari has usually picked up his experience while grazing his flocks, and will have a wide experience of the game which is always locally migratory. These shikaris will have little or no knowledge of stalking, but will be able to indicate, over a wide area, where ammon or bharal are to be found at any particular time of the year.

Professional shikaris in the Kala Chitta Range are some of them very competent. There is a list kept in the Deputy Commissioner's office at Campbellpur, and it is advisable to select a man who lives well out in the country. Last time I went there, my former shikari having died, I asked for another, and was sent a nasty little low-caste man from the Campbellpur bazaar, who knew nothing about the whereabouts of the game, and whose only recommendation was his eyesight. His pay also had been raised to a most exorbitant rate, probably on the recommendation of some clerk, who had been duly sweetened, and he had the impertinence to assure me that I need not bother about any game laws as long as I was with him.

In other parts of Northern India the shikari is almost invariably a villager, who happens to know the likeliest places for game and has no idea whatever of stalking, though he will have supreme confidence in his own ability.

So far the question of personal servants has not been touched on. Outside Kashmir it is essential to take a bearer to cook for one, as no substitute can be obtained on one's shooting ground ; but in Kashmir very fair cooks are available at moderate wages, so it is a matter of choice.

If you are resident in India and make a regular practice of spending your leave shooting or travelling, a personal servant who is efficient in camp, strong, and a passable cook, is worth untold gold. It is more than worth while the little

extra expense of his railway ticket, and slightly higher wages in Kashmir, to have such a man with you. A good Punjabi-Mahomedan bearer is as loyal and hardy a man as can be found anywhere, and of them I place the Sudhans of Poonch State at the top of the class.

For one thing a good personal servant will protect one from the eternal pilfering of the Kashmiri servants, and help to prevent one's travels becoming a continuous series of petty impositions on unfortunate villagers, with consequent reactions on one's own popularity and sport. There is nothing more maddening than to have a dispute over petty purchases at every other halting-place, with the Kashmiri shikari or cook shouting, threatening to beat villagers to whom he would not dare to say a rough word if his sahib were not there, and protesting with oaths that he never had the chickens, or the milk, or the firewood ; or, if he had, that he had already paid for them twice over.

The only way to avoid such troubles is to allow nothing to be required from the villagers except by one's personal permission, and to pay for supplies personally or through the lumbardar, or stand by while it is being done. The lumbardar will always turn up in the hopes of a little bakshish, often very well earned, and by being the last to move off from the camping ground and asking him, before departure, if he has been paid for everything, much trouble can be avoided.

In Kashmir the camp staff will thus be : one personal servant or cook, one tiffin coolie, two camp coolies. As in other parts of India it is perfectly feasible to get about with a couple of personal servants, and engage other help from stage to stage ; and, in my opinion, such a method is very enjoyable and results in the best of local help being forthcoming, instead of a passive resistance due to the unpopularity of the Kashmiri shikari. The adoption of this method is to be encouraged in Kashmir. It will meet with the greatest opposition from the Srinagar agents and shikaris, who will draw the most gloomy pictures of probable disaster, but as I did six months in

Kashmir, on my very first Himalayan trip, with only a bearer and two coolies, marched 1,500 miles and had most excellent sport with the assistance of villagers, there is obviously nothing to be nervous of in trying this out. As most subalterns are hard up these days, as also many officers considerably senior to that rank, everything which will enable a holiday to be taken cheaply with the possibility of good sport and the certainty of enjoyment, is at least worth trying once.

GETTING TO THE SHOOTING GROUND.—Having got together the outfit, stores, food supplies, and camp personnel, at the advanced base, it only remains to start for the shooting grounds, and getting on the road for every trip has a thrill of its own, which may lessen with years and experience but is never quite absent.

In Kashmir the first stage may be covered by a houseboat, up or down the Jhelum, and it is very pleasant floating on the shining river, idly listening to the labouring *manjhis* encouraging each other to pole harder, with fervent appeals to local saints; the snow-capped mountains showing over the green willows or poplars fringing the banks, an approaching clump of great *chenar* trees indicating the presence of the next village. Bird life is plentiful, little loose-crested bulbuls, flying in and out of the houseboat, picking up crumbs and saying: "Quick, have a drink with me"; jackdaws cawing in the *chenars*, and fishing eagles screaming from the tops of them. At a halt the pied kingfishers will use the mooring post for their hunting stand and the little blue ones drop with a plop in the river, then bring their struggling minnow to the bow of the houseboat to be whacked on the planks before being swallowed head first.

The houseboat takes little care in loading, except perhaps to see that perishable goods are not stored below in bilgewater; but if the start is made by lorry, then careful watch must be maintained that small and frail articles, such as eggs or hurricane lamps, are not stowed under the larger and heavier boxes.

If the transport be coolies or ponies, the loads should already be made up and weighed before their arrival ; and, if possible, the whole lot should start together.

But, by whichever means the initial start is made, it is most advisable that it should not be too early or the march a very long one. Sorting out and allotting loads will take long, servants will discover minor necessities which have to be bought at the last minute, and settling into camp on reaching the destination will take double the normal time.

If a change of transport is to be made at the new stage, get hold of the lumbardar as soon as possible after arrival and give instructions personally. It is advisable to push on ahead of one's transport when two-thirds of the march is done, so that fuel and other supplies may be ready by the time the kitchen arrives.

If doing double marches, keep a man one march ahead, so that transport will be ready at the intermediate stages and delay obviated. Rise early and march at sun-up : even at 15,000 feet it can be very hot at midday, and getting into camp late in the evening, or after dark, is always very hard on the servants.

If a snow pass is to be crossed it is essential to get over before the snow is softened by the sun : the coolies, who march less than half as fast as the unencumbered sahib, are the people affected by the soft snow and by the danger of resulting avalanches.

When actually marching it is inadvisable to get too far ahead of one's transport on rough tracks. Accidents are not infrequent with animal transport and a night marooned without one's kit, or the loss of one or two loads which might have been saved if one had been there to inspire the necessary zeal for recovery, will have a most chastening effect on any desire to show off walking powers on bad tracks. Also such accidents may involve pecuniary loss, e.g., the yakdan containing the silver coin and small change essential for wild districts may go over a cliff—or the loss of a valuable rifle,

or of trophies, any of which happenings will destroy the pleasure of the trip and, perhaps, force an immediate return.

Such bad marches are usually well known and uncommon, so need not be considered as bound to occur in the course of a trip, but where they do occur due precautions must be taken. As a rule marching is a never-ending delight, there are so many new things to see, such grand or beautiful scenery to admire, strange people strangely dressed to be met with, and their customs and their language to be learnt, even sketchily : for a few words of the local dialect and a little knowledge of their ways, will help immensely towards good relations, better sport and avoidance of wounded feelings.

Most jungle folk are cheerful, simple and pleasant to deal with, so that friendly advances will be met half-way. Little differences of habit in the matter of toilet should carry no weight with the traveller. If it is a warm climate and there is water available the local inhabitants will wash, if it is a cold climate they will not, or only on rare occasions. The Tibetan of further Ladakh never washes, merely adding a mixture of fat and yak's blood to protect his face in winter, but, treated in a friendly way, he is one of the most cheerful and willing workers in the world.

Often a bit of most useful information as to the whereabouts of game can be picked up in the course of a casual conversation, and, during the midday hours when every living thing is resting, encourage your local help to talk on any subject that pleases them ; they will inevitably come round to the subject of shikar, of previous sahibs and where they shot and, most useful of all, what they got.

There will nearly always be half a dozen villagers sitting about the camp, watching the sahib's funny ways, and, though their curiosity may be a bit of a nuisance at times, it is sure to be worth while having a talk with them about the local big game, the road ahead, supplies and the weather. A little knowledge of the local crops is a very good starting point for a conversation.

Of course accounts of the road ahead may be strongly influenced by whether the villager is being asked to carry a load to the next stage, and they are often quite firm about a particular pass being closed by snow, in order that the sahib may go on farther and employ another village to get him over the range of hills. But, while I have in memory being induced to go on several marches farther up the Shyok by the persuasion of the village below the Chorbat Pass, which falsely assured me that it was not possible to cross (incidentally with excellent results in the way of shikar which I would not have obtained if I had crossed at that point), I also have in mind that on the next long trip I disregarded the advice given me at Triloknath in Chamba-Lahoul, and crossed the cliffs of the gorge below after heavy rain, with terrifying and almost disastrous results in the way of a bombardment of falling rocks, which nearly finished the trip for me and has made me very chary ever since of entirely disregarding local advice.

On making camp at each halt there is not much to be said, for there is nearly always some regular camping ground, but as far as possible it should be well removed from the village itself, for the close neighbourhood is certain to involve a plague of flies and the visits of thieving pi-dogs, which make the night hideous with their yelping. Thought should be given as to whether sun or shade are desired, according to climate, to the possibility of heavy rain, which should be countered by digging a little channel all round the outer fly of the tent, and to the prevailing direction of the wind. This last is most important, for there are many places in the hills where an evening wind springs up which can cause extreme discomfort, and possibly damage to the tent, if it is facing the wrong way.

Arrived at one's hunting ground the siting of the camp needs considerable thought. The site will probably be occupied for several days, possibly for some weeks, and the proximity of water and fuel, shelter from bad weather, and simple

sanitary precautions have all to be considered. It should be pitched as near the hunting ground as possible without any likelihood of alarming the game, and it should be remembered that the sound of an axe chopping wood, the glow of a fire, and the scent of several humans, all carry a long way. It is far better to avoid risk of causing the game to shift, by pitching camp a little far for immediate work and take up a small bivouac, with a spirit lamp or Primus stove as the means of cooking, to gaining a mile and risking spoiling much of one's ground. Alarm is easily communicated among different species of wild animals, and a little recklessness in the choice of a site for the shooting camp may convert a well-stocked nullah into a barren desert.

The game of the cliffs rely mainly on the inaccessibility of their fastnesses for their safety, and do not worry much about fires or tents a good way below them, but ammon or barasingh will shift ground immediately if the camp is too conspicuous.

One factor which will influence the choice of the site for the shooting camp will be the presence and probable progress of the herds of cattle, sheep and goats which swarm up into the hills annually. Buffaloes do not usually go very far up, but sheep and goats may be met with almost anywhere up to 15,000 feet, even higher in Rupshu and Changchenmo. Consequently a spring shoot often involves shifting camp every few days as the herds arrive; the game moving on ahead of them to bad ground or areas devoid of the plague. The herds begin to move over the lower passes in early May, and I have seen hundreds of ponies plodding through the snow on the Tragbal Pass in the first week of that month; but they do not penetrate to the higher nullahs for another month as a rule, for the grass has not grown sufficiently to afford feed for the hundreds of goats and sheep which clear the hill-sides like locusts, so that slopes of lovely verdant green turn brown in a couple of days.

If there is no reliable news of the whereabouts of the

grazing camps, it is most advisable to send a man ahead to the proposed shooting area to find out if it is occupied by shepherds and their charges : such a precaution will often save having to come out of a bit of ground and use up precious days marching to a clean area.

This is particularly advisable in Ladakh, for the nomad *champas* are perpetually shifting camp, and even then one may have the annoyance of finding yaks and sheep coming into one's ground as one arrives. In August 1933 I arrived, after a very long, hot march, at the mouth of a very good nullah in the Zarra Valley, in Rupshu. As soon as I pitched camp moving black and white dots came in sight from the opposite direction and, in the next two hours, I watched disgustedly no fewer than fifteen herds of yaks move up into my chosen ground.

In Baltistan and Astor this nuisance is not so great, for the great herds from the plains do not penetrate so far, and the summer grazing camps, or "*bransa's*," of the local villagers are permanent fixtures which are occupied every year, and by taking up one's own camp close to them much valuable information may sometimes be acquired.

One word of advice. When marching up through grazing areas, do not sit down below a steep hill-side on which sheep and goats are feeding ; or a whizzing stone, dislodged several hundred feet above may cause sufficient injury to put an end to the trip.

CHAPTER V

SEARCHING FOR GAME, AND THE STALK

It would seem, to the inexperienced in big-game hunting, that searching for game needs little discussion or experience ; being, to the uninitiated, merely a matter of good eyesight and perseverance. Some may even assume it to be largely dependent on the walking powers of the searcher what success is attained in finding game, and, putting that idea into practice, will view the disappearing butt-end of animals more frequently, and spoil more good ground in a day than the expert will need to cover in a week's hunting.

To find game, without the game seeing the finder, which is the first essential of good hunting, a considerable knowledge of the habits of the quarry is needed, and to find old males of the species sought after a still greater knowledge is required. Beginners' luck is notorious, but one or two lucky chances, leading to the assumption on the part of the less experienced that big-game hunting is an easy business and that there is little to be learnt to make one successful, will certainly be followed by many blank days if sufficient is not learnt from each successful stalk.

To find game the first requisite is a knowledge of their feeding habits, and to establish oneself in such a position before the morning and afternoon feeds that the most favourable ground may be watched without alarming the animals. It is no use being too close ; for the wind, or a slight movement of the hunter's which would pass unnoticed at a greater distance, will certainly give warning of his presence to the herd as it is on its way to feed : consequently it is

frequently impossible to carry out the stalk on the same day as the spy, if hunting in the higher hills.

Impatience is the most fatal weakness which the stalker can indulge, for failure to study the ground thoroughly, or the hasty conclusion that no shootable animal is present because females and immature males are the only beasts to be seen during the first hour's watching, will lead to a move being made to other ground ; with the probability that the hunters will be seen by animals which have all the time been lying down in thick stuff to a flank, or above the feeding herd.

Old males would never grow old if they did not make use of their wits and exercise more caution than the others of their kind, and one has only to watch such an animal to realize that he very rarely gives away an advantage to any possible enemy. Thorough use is made of the eyes and noses of unwarrantable beasts, and cover of all kinds, from perfectly matching background to the shelter of a patch of bushes, is exploited to the full ; while the shady side of a hill or stretch of forest is almost invariably favoured for the purpose of grazing, in any but the coldest weather. Most really old males of hill species will usually wait for the herd below to settle down to feed, and will not descend to join it until their every suspicion of danger has been eliminated : even when they do come down they will feed above the herd and upwind of it. The old males of plains' species will try and graze downwind of thick cover, and with other animals guarding the open flank.

It is their passion for shade, however, which makes old males so difficult to pick up with the glasses ; while, except for shapu and ammon, they are rarely seen on open slopes which give a colour contrast or throw shadows making them easy to define. Shapu and ammon counteract their visibility by the care with which they select commanding positions and their habit of changing feeding grounds without apparent cause.

Here is a typical example of the difference in behaviour between females and an old male of the same species.

An oorial ram, a fine beast with 30-inch horns, had been disturbed by stones dislodged by me on the opposite side of the ravine in which he was feeding. He promptly moved up the slope to the lip of a small plateau, where he could see all round him, and into the shade of an acacia thorn ; while the two ewes with him jumped on commanding rocks and stared about them. The ewes, in spite of their coloration blending with the background, would inevitably have given away the ram's position to anyone accustomed to use glasses ; but the ram, in spite of his conspicuous black chest and curving horns, was extremely hard to see ; a patch of sunlight on his horns was the principal means of detection.

It is the females indeed which are the best guide to the desired male ; for, even if he be not present with them, he is probably somewhere in the vicinity, and careful search will discover him.

The more astute and wary old males will often take to some small patch of ground well hidden from view, unlikely to be disturbed, and guarded by bad ground or the presence of others of their species on the way to it, whose behaviour will give ample warning of the approach of an enemy. Old ibex and bharal are particularly given to such quiet retreats ; living there in small parties of two to half a dozen. An old oorial ram will also take to the head of some secluded ravine, and live on what grass he can pick up among the bushes, supplemented by browsing, and will very seldom emerge from cover.

To show oneself on the skyline of the ridge commanding such a resort is to court defeat by the occupants, who will have several ways of quiet withdrawal, or will retire into thick cover from which they can keep a watch on the intruder without showing themselves. It is therefore necessary to occupy one's position of observation without giving the fact away ; and when an animal has been watched and its habits studied without an inkling reaching it of the presence of an enemy, it is very unlikely to change its feeding grounds, so

that the planning of the final close approach can be made without hurry and with reasonable expectation of the quarry being still in residence.

On arrival on the shooting ground a consultation should be held with the local shikari, and the most likely spots for game ascertained before going out to search. The shikari will very likely have no idea of keeping down wind of likely places, and will not trouble to make a detour to approach them from the right side. The village help is also very often a man who has merely seen the game in the course of his natural avocations, such as sheep-herding, and will be quite satisfied that he has played his part if he shows it to the sahib in full flight ; his brain not functioning beyond the point of actually setting eyes on the animal. If he takes the sahib round and shows him plenty of animals by the simple expedient of jumping them, he will be quite certain that he has more than earned his pay, and that magazine fire at half a mile would have been certain to account for one or two of those seen ; so, in his estimation, it is quite obviously the sahib who is incompetent and not himself.

Even the knowledgeable shikari will often have no ideas outside his own jungle ways of getting a shot at an animal, and sitting over water, or beating, are certain to be recommended if more likely to result in a kill. It is a curious thing that intelligent Europeans who might be expected to have sporting instincts well developed, will sometimes accept suggestions from some jungli savage which are entirely destructive of all sport.

In the plains the stalk will probably be carried out very shortly after seeing the animal, but it is most unwise to allow oneself to be hurried into hasty action without proper study of the animals' probable movements. It is no use rushing off to circle round behind cover, if, on arrival at the selected spot, the quarry is no longer visible, having moved off on its natural line of feeding. It is far worse if the animal is suddenly met with on the way, and goes off in full flight. For while,

in the first case, the animal may be found again and no great harm has been done, in the second it may never be seen again.

On spotting a good head the first thing to decide is the probable trend of its movements, and often a careful calculation of time and distance has to be made ; while, if it be late in the morning and there be some likelihood of the beast soon lying down or retiring into cover at the finish of its feed, careful survey of probable resting-places, and the routes to them, must be made.

If the animal is likely to lie down fairly soon, it is most advisable that the stalk be postponed until it does so : for not only is the change of position likely to alter circumstances very considerably, so that the line originally chosen may bring the stalker into full view, but the actual place selected for lying down is always sited with a view to seeing without being seen, so that even if a successful approach be made under good cover the beast may be invisible on arrival at the firing-point. If the stalker had waited a little longer at the first point of observation he would have seen his quarry enter that small patch of bushes, or shallow cave, would have marked the place by some conspicuous feature, such as a dead tree or outstanding rock, and would have no difficulty in getting up within easy range, then waiting for the animal's reappearance or whistling it up. If he arrive at his firing-point and find his beast apparently gone, and is without any idea of its direction, he is almost certain to show himself in subsequent efforts to locate it.

In the hills, a day, or several days, may elapse between first seeing the desired head and the actual stalk. While sheep usually lie down on or very near their feeding grounds, goats will nearly always rest on crags high above them, descending in the early morning and late afternoon to graze, and the route they take must be very carefully studied. Sheep ground is usually quite easy, and the distance of the stalk can be covered in sufficiently short time to make an immediate stalk quite feasible ; though, if the prevailing wind or the

position of the herd make success too much of a gamble, it is far better to wait and study the ways of the desired beast, with a view to carrying out the stalk when opportunity is more favourable, rather than risk sending right away what may be the one good head seen on the trip. It is no use marching for many days to reach good ground, only to ruin one's chances by a little impatience ; while it should always be born in mind that wild animals do not shift their feeding grounds for no reason at all, and will almost certainly, if undisturbed, be found to-morrow close to where they are to-day.

Often, while watching sheep, they will get up and begin to feed or shift position when apparently settled for the midday rest, and such a change of position may be favourable to the stalker. I once waited amongst some rocks, watching a herd of shapu which were lying down in a quite impossible place on the opposite side of the valley. While I was having lunch they suddenly rose, gazed around for a while, then rushed headlong down their slope towards me, a cloud of dust and leaping stones accompanying them. They reached the bottom of the valley, climbed straight up towards me and halted within a hundred yards, so that I was almost ashamed to shoot the biggest ram, the chance was so easy.

With wild goats the calculation of time and distance is often a most intricate matter. For the actual feeding ground may be impossible of approach, and an opportunity for shot or photograph only obtainable on their way to it. Then enters the question which dominates nearly all hill sport, that of wind. In the early morning and late evening it will blow downhill, and uphill during the rest of the day ; but, as the change is merely governed by the warmth of the sun, which is again governed by the state of the weather, the time of that change can only be estimated by careful attention to the weather. Nearly all parts of the Himalayas have their particular brand of local weather, and clouds will be present in some quarter at some regular hour of the day, but mean

nothing more than that the prevailing air-currents cause the moisture locally extracted from the valleys by the sun to collect round some prominent high feature. If these clouds be in the east at sunrise, and the full warmth of the sun be consequently late in getting on to the western slopes of the hills, the change to an upward wind will be delayed from the usual hour after sunrise to a good hour later ; and the stalker, having risen long before dawn and climbed the hill by moonlight, will have his shivering wait prolonged by that amount before he can make his traverse to get over the herd and on to their line of return to their midday resting-place amongst the crags. If the day continue cloudy the wind will very likely be so fitful and uncertain that the final approach cannot be risked, and a return to camp will have to be made.

Thus, when planning the approach to wild goats, not only must their ways be studied, which are governed by the position of the feeding grounds and resting-places, and which will change in accordance with the new grass produced by the melting snow ; but the weather and *general* direction of the wind are most potent influences.

Late in the year, when the game is high up on the mountains, it will seldom be possible, in the Himalayas, to make the stalk from camp, and a bivouac must be taken up to some sheltered spot well to one flank of the quarry's ground.

In the lower hills, where there is no snow and the distances are not so great, while the ground is more broken and the quarry usually first seen within a thousand yards or less, the stalk will often immediately follow the spy.

THE FINAL APPROACH.—The two factors which govern the planning of the final approach to within close range, are wind and cover.

The general direction of wind has already been dealt with, but its local variations are important in the extreme, and some attempt is necessary to describe their probable direction ; for it is the local and unexpected variations which so often nullify the most careful planning.

That warm air rises and cold air sinks is the axiom governing calculation of the general trend of the wind, and that it is fluid and influenced in local direction, like water, by the earth formations against which it impinges, is a fact which is often forgotten.

On days when the sky is heavily patched with clouds, and the appearances of the sun fitful and unprolonged, the wind will be very unreliable. On top of a hill, especially when the upper air currents are weak, the upward draughts will meet and whirl round it just as does water round a big sunken rock. In Rupshu, where glaciers are stuck amongst big rounded hills like plums in a duff, the chill airs blowing off them meet the hot currents off the sun-baked barren hill-sides with results which are hard to foresee and disconcerting in the extreme to the stalker.

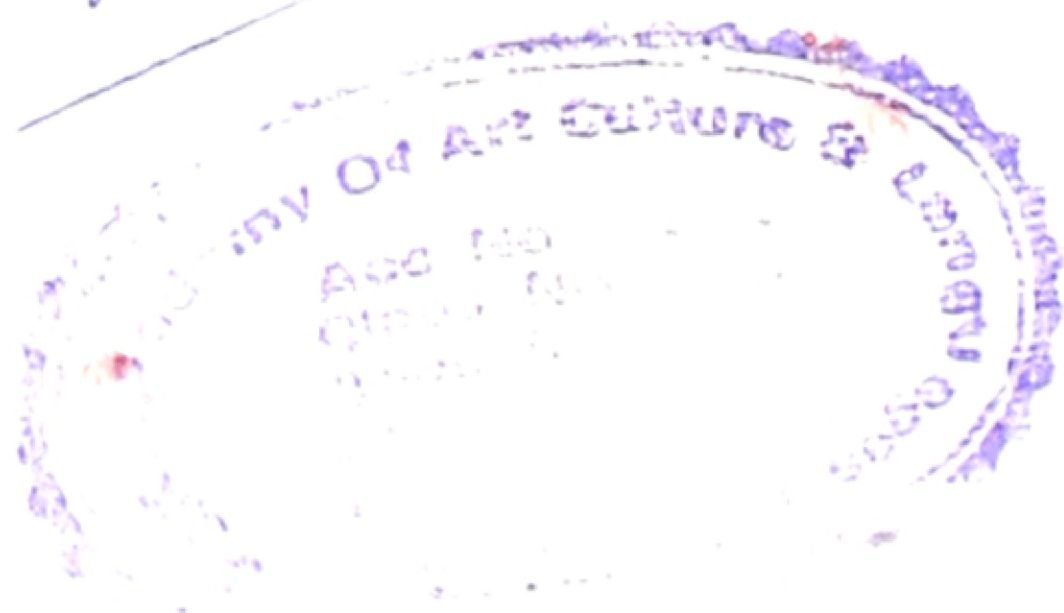
As the result of experiment I have come to the conclusion that 15 degrees on either side is the maximum angle of distribution of scent from its point of origin, and any angle outside that can be disregarded. This does not take into account local variations of wind such as a cross-current blowing from some deep saddle of the ridge which is being traversed. Thus, if ammon are being stalked and they are feeding on the west side of a long ridge near the head of a nullah which runs southward, the general direction of the wind at 9 a.m. will be up that nullah. If the approach be made up the east side of that ridge, and there be a deep saddle south of the rams, the local uphill wind will very likely carry the stalker's scent across that saddle, where it will be picked up by the northward breeze and carried to the ammon; to the great disappointment of the stalker when he tops the crest above them.

If the rams are feeding under the lip of a small glacier, it is essential to keep high above them for the general wind to take the scent well upward; then, on reaching ridge immediately adjoining the glacier, to carry straight down behind it until slightly below the ammon, before the final crawl in.



OVIS AMMON RAMS AT 17,000 FEET IN RUSSIA

Cultural Academy



If a direct approach be made on the same contour level, however good the cover from view, the downward breeze off the glacier may pick up the scent and take it to the rams. By using the local upward current on the hither side of the adjoining ridge the scent will be carried well up and kept confined to a smaller area of distribution, until it is so high as to be above the cold glacier current, which is like the undertow of a big breaker.

At times apparent liberties can be taken with the wind by the experienced, and I can think of no better example of this than my last stalk after bharal.

A herd of about thirty suddenly turned up late in the afternoon in a big side nullah which branched off eastward from the main valley and formed a quadrant of a circle running from west to north, with a high cliff on the outer side and a series of broad and shallow ridges running down from the mass of a big hill on the east like spokes from the hub of a wheel; with the cliff, at the foot of which was a deep ravine, forming the rim. It was about half-past five, and the stalk had to be rushed before the sun went, as it was our last day in the nullah. Time was lost at first by the man who had seen the bharal taking me to the top of the cliff; declaring that the wind, which was blowing strongly up the nullah from the south, precluded a stalk from that direction. The bharal were at the foot of one of the broad ridges, just above the ravine, and were feeding slowly uphill, so I ran back half a mile, crossed the ravine and climbed on to the ridged ground on the inner side of the quadrant, relying on the wind constantly carrying my scent up the face of the cliff and over the top. Arrived at the next ridge below that which the herd was occupying, I reached a position at its foot from which I took a couple of photographs. Then, wishing to get nearer, I moved up behind it to where it more closely approached that on which the bharal were grazing, and again, relying on the upward send of the wind blowing directly up the back of my ridge, was able to make two more exposures. Although

the wind was blowing on the back of my neck the herd showed not the slightest sign of disturbance, and, climbing on a rock with the setting sun behind me, I used up my last film to get a picture of the rams with raised heads ; which I only obtained by whistling loudly.

Such use of the rising or setting sun is most advantageous at times, in particular if the crest of a ridge has to be passed : for if the stalker keep on or just below the crest on the side of the game, provided the skyline is fairly broken and he does not move too suddenly, it is amazing how absolutely open ground, without a trace of cover from direct view, can be crossed without detection. Even as the excellent hearing of a man accustomed to the wilds is confused by a multitude of sounds, as when several people are speaking simultaneously at a big dinner party, while any of those present who are accustomed to the medley of town noises have no difficulty in picking out the words uttered, so the super-sight of wild animals seems to suffer more from direct sunlight than that of us humans. It is noticeable that nearly all wild animals can see better in a poor light, such as in mist or at dusk, than even the trained eyes of the professional hunter.

In studying the probable general direction of the wind on reaching the top of one's climb before beginning it, the drift of clouds is a great help at times, but cannot always be relied upon. In the absence of other indication it may be made use of, but careful note taken of any changes occurring on the way up.

In the plains judging the wind is usually a simple affair, but it should be remembered that it still has the same tendency as in the hills, to swirl like water round some large solid obstacle, such as a big clump of trees standing by itself, or a rocky outcrop.

To test light winds a handful of dust thrown in the air, or a few fibres plucked from a tweed coat, will indicate the direction of the lightest currents.

USE OF COVER.—“ Cover ” is a word which embraces a

great deal, including any sort of protection from direct view ; but, in considering its application, it must not be forgotten that shade, conformity in colouring to the surroundings, and absence of movement at critical times in a stalk, all play a very great part in defeating the keen eyes of game.

To say to a novice that throughout a stalk he must keep behind cover is often to limit severely his stalking abilities ; until he discovers for himself that a patch of ground devoid of anything but low and scattered vegetation, without rocks or gullies sufficiently deep to hide him, may yet provide adequate cover for a stalk.

It is, however, imperative to study thoroughly the ground over which the stalk is to be carried out, before committing oneself to a line where a suddenly encountered forward slope, or other obstacle, effectually stops all further progress and sends one back to begin all over again. The trend of every little gully, which it is proposed to use, must be borne in mind as clearly as possible ; so that a sudden turn in its direction may not bring the stalker into full view of his beast before close range is attained.

On the flat a series of landmarks or intersecting points, which can be seen without raising the head so as to risk being spotted, should be memorized before setting off ; and the position of the beast with relation to some conspicuous object near it should also be noted.

Dead trees, big rocks, peculiarly coloured foliage or anthills of outlandish shape, are all useful helps ; but living trees, unless with some unmistakable feature such as a crooked dead branch at the top or a hanging creeper, should be avoided as guides : for they have a way of changing shape with the direction of view which is most disconcerting, while they also melt into a background of other trees which may come into line with them as the stalk progresses.

If grass or low bushes are providing the cover the desire to have a look at the game every now and then, by pushing up one's head over the top, must be sternly repressed : having

once decided on the line of approach any unnecessary exposure will certainly lead to disaster. If crawling behind very low cover it is as well to remember that, to a wild animal, one's sit-upon is just as suspicious and conspicuous an object as the top end, if raised into view.

All these points are fairly rudimentary, but what most novices fail to realize, and some never learn at all, is the value of keeping still if seen by the game when out of range. It is possible to lie in the open, without a vestige of cover, within 200 yards of even such wary animals as bharal, if the clothes worn are sufficiently inconspicuous and no movement is made ; while even if the beasts be suspicious and eventually move off, they are unlikely to go far, or will come back to that same ground for their next feed.

Once, in Kishtwar, when stalking six old buck tahr, they suddenly arrived on the same face of the spur as ourselves, and began to feed on a little cliff just 200 yards above us. I had had a glimpse of them coming and, as there was no time to gain cover from view, lay down in a little dip with the shikari behind me. As usual, when beginning to feed in a new place, the tahr had a good look at all the ground below and round them, and stared hard and long at us ; but eventually their heads went down, after about twenty minutes, and all but one were satisfied. The one buck who was still suspicious was beginning the final re-examination of points of danger which precedes complete satisfaction, but was evidently assured that we were bits of dead wood, and would have put down his head to feed in another couple of minutes if the shikari had not become impatient and begun pushing the rifle up to me. I tried to stop him by furious grimaces, but, like most of his kind, he had got over-excited and persisted, although I had no intention of shooting as I considered the range too long and was sure that, as the wind was safe, the tahr would very shortly feed down another 50 yards nearer to me. Although the movement was very slight, the heads of the remaining five also went up and they walked forward, each

to the lip of the ledge on which he was feeding, and stared down. The shikari gave the rifle another slight push upward, they turned and, leaping from rock to rock, disappeared into the pines above.

This illustrates one of the chief difficulties with which one has to contend under such circumstances—the excitability of the average shikari when game appears suddenly at close range. His first thought is to kill something, and he will thrust the rifle into his sahib's hands, exclaiming: "*Maro, Sahib, maro ; bara walla hai,*" regardless of whether the beast carries a good head or is quite unshootable. Very often he succeeds in communicating his excitement to the sahib, who shoots wildly and often, with the probability of completely scaring away not only the particular animal or herd fired at, but of laying low some unfortunate female or immature male.

There is absolutely no reason why the shikari should not be kept behind throughout the stalk, as well as on the march ; he can always be consulted, if necessary, and it is only when a guide is needed on a difficult track that it is necessary to have anyone in front. The Kashmiri shikari will inevitably try to be in front at all times, as his idea of shikar is that he should do everything but fire the shot, and his Sahib be kept in the background until it is necessary to produce him for that purpose alone. This enhances his self-importance, induces the sahib to take little interest in any of the camp arrangements by which the shikari adds to his income, and inculcates the idea that the shikari is absolutely indispensable : an idea which can be proved without foundation in fact by the simple expedient of doing a trip in some other part of Northern India where the entire management of the shoot falls on the sahib himself, there being no one else to do it.

If, during the final approach, a bit of open ground has to be covered, the shikari should most certainly be left behind, as two are more conspicuous than one. It should also be firmly impressed on the shikari that he is not to show his head above cover, or he is apt to indulge his curiosity by peering

over to see how things are getting on : he may even, to demonstrate that the sahib cannot stalk successfully without his (the shikari's) assistance, deliberately show himself and put away the game. He will then assert that the sahib, whose back has been towards him, did something wrong and is therefore responsible for the failure to get up within range. I once dropped my Kashmiri tiffin coolie and a Balti (I had no shikari) behind a ridge while I went on to stalk a herd of shapu. Having got within range, I was waiting for the big ram to turn so as to give an easy shot, when suddenly all their heads went up and they fled. I looked back to see my two henchmen sitting on top of the ridge behind which I had left them, and the tiffin coolie flourishing the telescope ; to make quite sure of their being seen, he had left the hood of the glass unextended, and the lens was flashing in the sun like a helio gone mad.

On coming up to a bit of ground devoid of cover and in view of the quarry, which cannot be avoided, before attempting to cross it due consideration must be given to the possibility of the game feeding on to other ground giving a better opportunity, or of waiting for another chance on another day, or during the evening feed. As a rule an attempt to cross such an open space should only be made when after antelope or sheep, which are liable to shift their feeding grounds, as on the plains or in late summer in the hills.

If the attempt is decided on, then the position of the game must be studied. It is almost hopeless in the case of a big herd feeding on a wide front, or if the animal be feeding on very short grass : for the eyes of ungulates are so situated that they can catch sight of movement behind them. But if the beast's head be down and the grass fairly long, then it will usually partially close its eyes to protect them from the longer blades while cropping in the heart of a tussock, and will do the same when browsing to avoid the outer twigs.

It may be possible, if the open ground to be covered be very short, to cover it in one quick rush ; but, except when

the starting point is the crest of a ridge, which should be slid over head first and quickly while opportunity offers, the crossing should normally be made slowly, freezing when the animals raise their heads. If their heads go up it need not necessarily be because they have seen the stalker, for all animals keep a good look-out when feeding, and complete immobility on the part of the stalker will very likely prevent detection of impending danger. It cannot be sufficiently emphasized that immobility must be absolutely complete, however awkward the position in which the stalker happens to be caught : he must not make the slightest movement. If the tension last so long that cramp is impending, the afflicted limb must be shifted or stretched very slowly. It is also advisable to avoid looking directly or continuously at the game ; for I am sure that animals are endowed with that sixth sense which warns them that they are being spied upon by a potential enemy. Human beings have that sense, especially those of us who have spent much time in the less civilized and wilder parts of the world.

Making such an open crossing involves physical and mental strain, and wherever a rest can be taken behind cover during the course of it, the opportunity should be made use of, and body and mind thoroughly relaxed.

If held up by a too wary ewe, the stalker must be prepared for a wait of possibly half an hour : for wild animals, their lives being at stake, have great patience at such times.

Making a noise in the course of a stalk need not necessarily be disastrous ; it will depend entirely on what sort of noise it is. Stones, for instance, are continually falling in the hills, being loosened by frost, water, or the action of a growing root ; so game is not particularly suspicious of such a sound and, while they will raise their heads for short stare, will not take alarm if the noise does not recur too frequently.

Such noises may also be caused by other game, and, when pushing through bushes, no alarm is likely to be caused if the branches are not held back and then allowed to spring away

with a loud swish. Animals passing through bushes let them scrape along their sides and then move back into place as they reach their tails.

Any unnatural noise is very different in result, and game will take instant alarm on hearing such.

An ironshod khudstick striking a boulder, or the nail of a boot scraping on a rock, will put any game on the alert. Thorny branches scratching along a topi or the hard drill of a khaki coat, are also dangerous sounds. When I last went to the Kala Chitta Hills to photograph oorial, I had just had two new pairs of chaplis made for me, with broad nails in them. I found it impossible to get up to my beasts until I had removed every nail, and I strongly recommend that where possible, in dry countries, footgear be shod with old motor-tyre.

On another trip I had viewed a particularly fine oorial ram across a valley, and watched, with great interest, his proceedings on lying up for the day. When first seen he was standing on a rock on the crest of a ridge, from the far side of which he had just arrived ; and, the time being 10 a.m. of a November day, was having a good look round him before settling down to rest. At the bottom of the valley between us lay a much-used cattle track, and on both sides of it was much *sinetta* scrub and low broken ridges. Having made his decision, after an inspection of the ground which lasted some twenty minutes, the ram started obliquely downhill ; first using the nearest patch of bushes to reach a deep little gully which ran in the desired direction, then down this for about 100 yards. Leaving this to enter some thick scrub, where I had great difficulty in following his course, he entered another little gully where, as in the first one, he was quite invisible ; up a rift in the rocky side overhung by a big creeper, and 50 yards along through dense bush to the shade of an undercut cliff screened by bushes and overhung by wild vines, where he lay down out of sight. The wind was from the north—the direction from which he had come—the ridges in front

all ran across his position, so that, through the light screen of vegetation he could watch their crests ; beyond him, to the south, was a big open slope. The cattle track ran about 300 yards below him, and he was evidently accustomed to people passing along it, and must have used this refuge many times before.

To get up to him was a difficult problem, for the wind precluded any approach from the north, not even a hare could have crossed the open slope to the south without being seen, while a big detour and stalk from above would inevitably have resulted in my being unable to see him under the overhang of the cliff, and his bolting at top speed through the dense scrub of the tortuous gullies below.

There only remained the cattle track below him, and I carefully marked a point on it where it was out of sight from him for 30 or 40 yards, and the way thence to the crest of the ridge immediately in front of the ram. Then I slipped back into the valley behind me, over its head to the north and round out of sight to the next valley, where I joined the cattle track and sat down to wait.

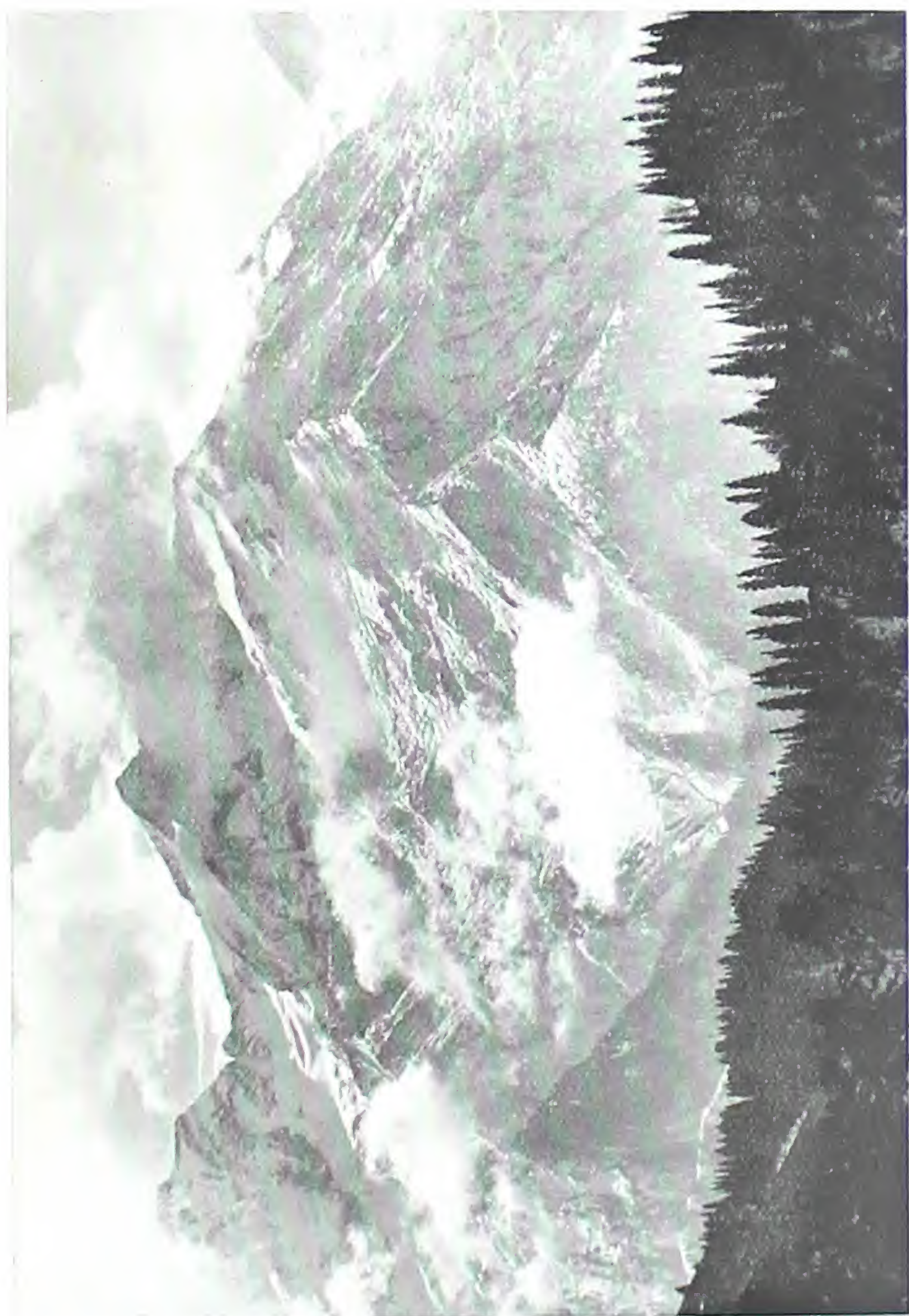
Within half an hour there arrived a dozen camels being driven by two shouting villagers, who unceasingly and loudly maligned the camels and their progenitors, and we mingled with them until we arrived at the point where the track was out of sight of the ram ; then, making use of a little ravine, had no difficulty in gaining the desired ridge. The ram's position was only 130 yards distant, but the bushes effectually prevented even a glimpse of him, and the only thing to do was to wait until he should choose to rise and feed, probably about half-past three, and there was still three hours to go. Having breakfasted before dawn I decided to have lunch, and, getting the tiffin basket from the coolie, very quietly extracted the cold chicken and cake which, with some oranges, constituted my provender : eating my meal under the shade of a big thorn bush which grew a little on my side of the crest of the ridge. I finished and began to put away the gear. As I took up the

enamel plate it knocked lightly against a stone and gave out a metallic clink.

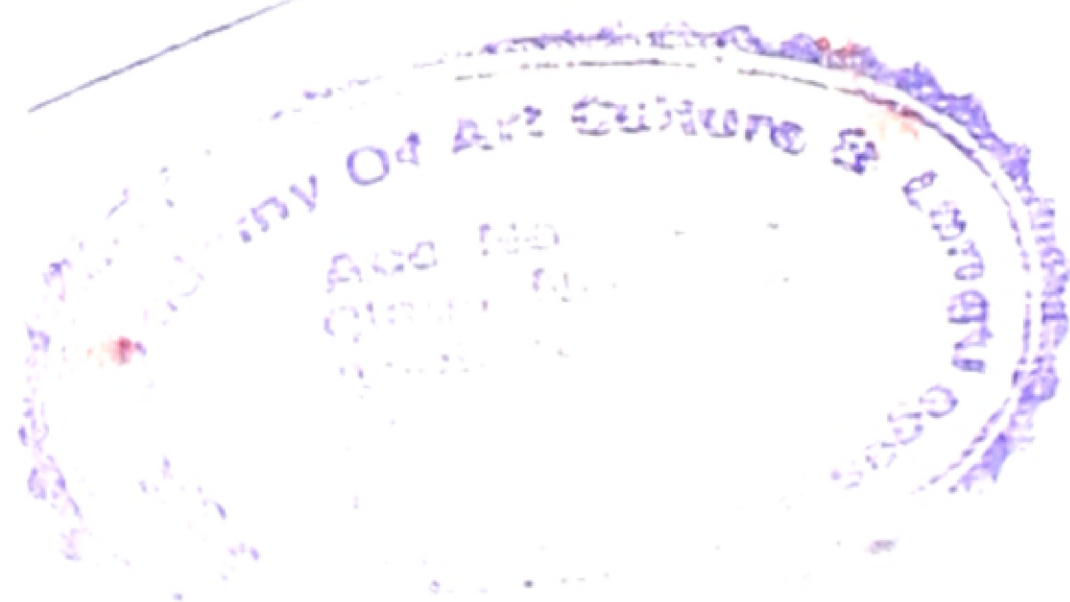
“That’s done it,” I thought, and immediately wormed my way to the ridge-top and watched through the bottom stems of a scanty bush ; but nothing moved, though I felt quite sure that the ram was now thoroughly on the alert. It was better to take the initiative myself, for if he went back by the way he had come to his resting-place, I would have no chance of seeing him until he was well out of range. I therefore sent the tiffin coolie round and up the slope to the north, telling him to stay there so as to make certain of giving the ram his wind, and to pretend to be a woodcutter by tapping trees with his stick.

He arrived some 300 yards to windward of the ram and began his tapping, but for nearly half an hour we gazed earnestly at the slopes round the ram’s harbourage and saw nothing. Suddenly the shikari pulled my arm and pointed. The ram was standing on the edge of some thick bushes 100 yards to my left front, half hidden, only his head and black ruff showing clear, evidently meditating his next move, which would most probably be a quick dash across the 20 yards of open hill-side separating him from the dense thicket in the next little ravine, whence he would have complete cover to the wide stretch of scrub jungle across the valley. How he had got there without my seeing hide or hair of him was a marvel ; but he must have begun to move as soon as the tiffin coolie’s wind reached him and he realized that departure in that direction was dangerous. He could not possibly have seen me and only the clink of the plate had given away my position, so that he had taken the only route which would give him cover for nearly the whole way across my front.

I had to shoot then and there and tried to break his neck, but only cut a lock of black hair from his ruff, so that he went across the bit of open like an arrow, and vanished. I had two more rounds with this old ram, and found him just as



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wary each time, being finally defeated by him on the last day of my leave. I feel sure that, if it had not been for the clink of my plate, his horns would have adorned my wall ; but then I should have lost two excellent days stalking, and no beast has ever given me better sport, so I have no regrets.

AT THE FIRING POINT.—On arrival at the place selected for the shot or photograph a rest is essential : a shaky hand is just as disastrous to a good picture as to the course of a bullet.

During this rest several things need looking to. If a shot is to be taken the foresight should be wiped clean, and the rifle brought up to the shoulder once or twice and aimed at some mark inside sporting range, to focus the eye and loosen the arm muscles. Spare cartridges should be looked to and no effort made to look at the quarry until the breathing is quite even.

Then get quietly to a position from which the animal can be seen, only raising the head sufficiently to use the glasses. Before doing so the headgear should be camouflaged with bits of grass or sprigs of leaves stuck in the front band.

Carefully identify the desired beast, noting its relation to those near it, and their appearance and position, before taking the rifle in hand. Then wriggle into position for the shot, taking aim at the animal itself until comfortable, take down the rifle if the wait for a good chance is likely to be long ; but when the animal shows a favourable angle, nearly always three-quarters on or a quarter away, get the sights on the desired spot, and give a steady squeeze of the whole hand to release the trigger.

Consider the possible effect of a cross wind on the bullet before shooting.

Do not aim at the animal as a whole, but pick with care the spot it is desired to hit. If the beast is three-quarters on, just behind the point of the elbow is the best ; if a quarter away, a little behind the last rib and an inch or two below the maximum bulge of the side, according to the size of the

animal. In the first case a little too low will break up the big blood vessels of the chest, a little too high (which is much more probable) will still catch the top of the heart and/or lungs and liver. In the second case the order of probability is reversed.

If a definite aiming point cannot be seen on the animal, the range is too far and the shot an unsporting one.

End-on shots are a little more difficult, and their advisability is merely governed by the probability of a clean kill, which is almost certain to be the result of straight shooting with any modern stalking rifle and a well-placed bullet ; consequently, if the target is sufficiently well defined and the shot unhurried, that will quite justify taking the opportunity.

It may again be pointed out here that the sport of stalking does not lie in demonstration of ability to hit the target at long ranges : proficiency in shooting is most desirable to ensure a clean triumph at the end of a test of physical and mental efficiency. I once, goaded by aspersions cast by a companion on the efficiency of my rifle, a .280 Ross, misused its low trajectory and my shooting abilities : I soon became so ashamed of the resultant trophy that I threw it away, and I feel sure that no real pleasure can be had in looking at a trophy acquired in like manner.

At one time I used to try and get two good heads at the same stalk, selecting the next best beast in a herd before firing the first shot, but in this also I have learnt better : for why deprive oneself of another good stalk when the number allowed on one's licence is limited. In any case why shoot another head not so good as that for which the stalk has been made.

If a photograph is to be taken the final position will probably be nearer the game than in the case of a shot, and proportionately greater care must be taken to avoid detection before everything is in readiness.

The camera should be racked out to the desired extent and focused on some object at about the same distance as

the game. The lens should be wiped clear of dust, the hood pulled out, spare plate carriers placed handy (I transfer from left pocket to right as they are used), the shutter-speed calculated and shutter and stop set, hood of reflex finder raised, and a possible rest for the camera selected.

Then carry on as with the shot, but use the first exposure on whatever can be got, then change the carrier round and expose the next for good grouping and head-up poses. If the animals are not alarmed it may be possible to make half a dozen exposures ; and, even after their heads are up and they are staring at the photographer, two or three may be made before they make up their minds to go, provided that there is a minimum of visible movement on his part. Such pictures often produce the finest results, the animals' poses looking as if they were exhibiting themselves at the premier show for their kind.

Always try to avoid completely exhausting your plates and films. A fast film pack should always be kept in reserve for possible opportunities on the way home. This has been impressed on me by bitter experience : only a month before writing this I used up all my films one morning, and, within a quarter of a mile of leaving the position, had superb chances for pictures of two species which I had not photographed and which are unlikely to give such another opportunity.

CHAPTER VI

THE PLAINS OF NORTHERN INDIA

BLACKBUCK or INDIAN ANTELOPE.

VERNACULAR.—*Kala hiran*, Hindostani ; *Mirg*, Punjabi.

DESCRIPTION.—Height of males at shoulder, 32 inches ; females, 28 inches. Old males black on back, sides and outsides of legs ; white on throat, chest, belly and inside of legs. A sprinkling of buff along the spine, increasing with age on the nape of the neck. Face black with large white patch round each eye ; inside and bases of ears, lips and chin, white. Young bucks and does are khaki-sandy where the old buck is black. Young bucks begin to turn darker in their third year.

Horns spiral, annulated, divergent at tips. Up to $31\frac{3}{4}$ inches straight, from base to tip.

DISTRIBUTION.—The plains of Peninsular India, and as far north as the Chenab River and Bikanir Desert. Not in forest or very wet climates, so absent from Assam and most of Bengal.

CHINKARA or INDIAN GAZELLE.

(*Gazella bennetti*.)

VERNACULAR.—*Chikara* or *Chinkara*, Hindostani ; *Husai*, Pushtu ; *Ahu*, Sind ; *Kalipi*, C.I.

DESCRIPTION.—Bucks average 26 inches at the shoulder and weigh 50 to 55 lb. Does are 3 inches less at the shoulder. General colour sandy-red, which is darker or dark brown, where it meets the white of the underparts. The chin and chest are white, the tail a very dark brown or black above,

white below. Knees dark brown. Bridge of the nose is dark brown, also sides of the face, the eyes set in light brown patches.

Both sexes with horns of the usual gazelle type, those of males to 16 inches, of females to 9 inches. Female horns are thin and almost smooth.

DISTRIBUTION.—All over India wherever there is open country. Not in forest, but like scrub jungle, sandhills and gravelly plains cut up by ravines.

NILGAI.

(*Boselaphas tragocamelus*.)

VERNACULAR.—*Nilgai* or *Roj*, Hindostani.

DESCRIPTION.—A clumsy, uncouth antelope, the males averaging 55 inches at shoulder, the cows some 4 inches less. Cows and young bulls are a dull khaki colour, and the old bulls turn iron-grey, darkening with age. Old bulls usually slightly striped with white on the withers, and with patches and spots of white on the face, throat, chest and fetlocks. The bulls have a pendent tuft of coarse hair on the throat.

Cows are hornless, the bulls having short, smooth horns, slightly ridged at the base and curving a little forward. Maximum length 11 inches.

DISTRIBUTION.—All over N. India as far north as the Ravi River and Northern Rajputana. They like mixed jungle and cultivation, but are rarely found in heavy forest.

THE FOUR-HORNED ANTELOPE.

(*Tetraceros quadricornis*.)

VERNACULAR.—*Chousingha*, Hindostani ; *Ban-bakri*, C.I.

DESCRIPTION.—24 inches at shoulder, and slenderly built. Colour light brown, the face-markings of the Chinkara are wanting, and the ears are more rounded. The spike-like horns are smooth and upright, anterior pair of a maximum length of $2\frac{1}{2}$ inches, rising from just above the eyes. The back pair are normally situated and run to $4\frac{1}{2}$ inches, though an

abnormally long pair of $7\frac{1}{4}$ inches came from the Central Provinces in 1928.

DISTRIBUTION.—Rajputana and the United Provinces, then southward throughout Peninsular India. Not in Assam or Burma. Usually solitary or in pairs. Low rocky ridges and flat grassy tops of ridges are their favourite haunts.

THE vast plains of Northern India, rimmed with mountain ranges, vary from extreme aridity in the west to copious rainfall in the east, with resultant increase of vegetation towards the Himalayas and a merging of stalking into still hunting.

As even such animals as the chinkara and the blackbuck, which can dispense with drinking for long periods, must have suitable grazing, it is to be expected that they would be much more plentiful in the irrigated country of the Punjab than in the deserts of Sind and Northern Rajputana.

In these latter areas, that interesting but non-sporting animal, the Indian wild ass (*Equus onager*), is partnered only by the two species of gazelle, the Persian, or “*ahui*,” west of the Indus, and the Indian, or chinkara, which ranges from Cutch to Peshawar, and southward as far as the Madras Presidency.

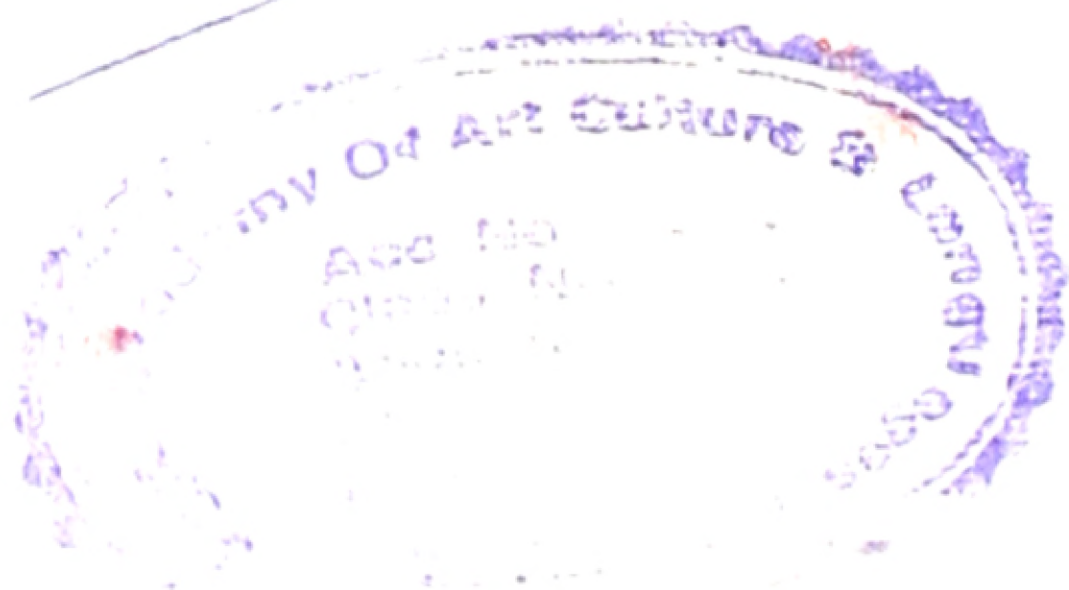
Increasing steadily in numbers as one goes east, the gazelle are met by the blackbuck in Northern Rajputana, then by the nilgai in Eastern Rajputana, and all three are joined by the four-horned antelope, or “*chousingha*,” in the United Provinces and Southern Rajputana. Stalking in the plains is mainly carried out in pursuit of antelope, but the hog deer, swamp deer and chital all provide opportunities for stalking, and must be included in any account of this form of hunting, while this chapter could not be considered complete without a reference to the mugger, which provide so much week-end sport and so many suit-cases to dwellers in Northern India.

BLACKBUCK.—But of all these animals it is the blackbuck



BLACKBUCK IN CENTRAL INDIA

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which provides most sport, and being the first game animal seen by the majority of stalkers, must be dealt with first.

It is probable that two out of three big-game hunters of pre-war days began their education by stalking that very beautiful beast, the Indian antelope, or blackbuck.

If the blackbuck were a rare animal it would be one of the most prized trophies in the world ; for the graceful, spiral horns, of which the length of the record pair, $31\frac{5}{8}$ inches, is almost the same as the average height of a buck at the shoulder, combined with the jet black of the body contrasting sharply with the white of the belly and chest, only relieved by the buff shading on the spine and nape, go to make the animal a thing of beauty, enhanced by its graceful movements and astounding leaps as a herd makes off. The wide-eyed does, though hornless and their sandy coats not as strikingly beautiful as those of the bucks, have a grace of form which renders them worthy mates of the heavier-built males.

They are found in all the drier parts of the Indian plains, from Lahore to Trichinopoly, and from Bombay to Eastern Bengal, but do not like big forests or high grass, and consequently do not penetrate to Assam, while their western limit is bounded by the Indus.

They mate at any time of the year, but mostly in the cold weather and the rains, while the black colour of the bucks, fully attained in their fifth year, usually fades to dark brown in the hot weather, and sometimes to the light brown of a young male. Some bucks never seem to acquire the glossy black coat, and the hot weather change is particularly pronounced on the plateau of the Deccan and Central India : though this does not necessarily affect growth of horn, for I have seen brown bucks in the cold weather, in both the Punjab and Central India, which carried trophies well above the average of their district.

Roughly speaking, the horns are finest in the north and deteriorate in length the further south one goes, but this seems consistent with the incidence of their habitat being

in a dry or rainy area ; for the horns from near the foothills of the eastern United Provinces, and in Madras, rarely attain 20 inches in length, while there are places in the Deccan where 25-inch heads are to be had, though they do not attain the 28 and 29 inches of Bikanir and the Punjab.

It would be perhaps better to write in the past rather than in the future tense, for "Ichabod" may well be written of the blackbuck in most of British India, and they are nowhere still to be met with in the numbers of even twenty years ago in any Indian State except, perhaps, in Bikanir. And for this we British are much to blame ; for we have allowed our young officers, civil and military, our soldiers, horse, foot and artillery, to use these beautiful animals as nothing more or less than targets. Sparing neither sex or size, forgetful of all canons of sport and stalking lore, they have shot at the antelope, dressed in native clothes, from native carts, with magazine fire at outrageous ranges, browsing herds, or surrounding and butchering the bewildered beasts.

It is a terrible thing to think that we, who call ourselves the most sporting nation in the world, who treat a man who shoots a pheasant out of season, or a fox at any season, as unfit for decent society, that we should have not only permitted but, as young and ignorant subalterns perhaps, have participated in such a thing.

It has been nobody's business and, because of the one-time plenty of antelope to be shot at, hardly any knowledgeable seniors have bothered to take up the cause of the animals and true sport, instruct their juniors in the right way, or curb the blood-lust of ignorant soldiers.

Three times I have seen a pile of does and young bucks, up to seventeen in number, with several proud N.C.O.'s sitting on their victims, being photographed ; little wonder that there is hardly an antelope to be seen within fifty miles of any of our bigger cantonments.

Little wonder too that the Indian has, with the increase

of arms, taken up the work of carnage, and that motor-buses may be seen coming into Delhi, their roofs piled high with carcasses, and that a Bombay firm advertises the meat for sale ; nearly all the animals being poached from native states or from our forest preserves.

That there are still many blackbuck to be seen in their original haunts is due mainly to the action of the Maharajas of Patiala, Bikanir and Jind, where the blackbuck are preserved ; and, though their numbers are kept down sufficiently to prevent serious damage to the crops, sufficient remain to ensure a sight of a herd in any sandhill area.

It is a sad commentary on our government's neglect of wild life, that within ten years of our minority administration of Nabha State, since the deposition of its Maharaja, there is hardly a blackbuck left alive in it, although they were too plentiful when we took over in 1924.

It is a regrettable fact that blackbuck have a partiality for young wheat, and that it is mainly due to this that they have suffered to the extent they have, but it does not excuse non-adoption of a properly balanced method of preservation in place of a callous neglect, closely akin to deliberate intention to exterminate these beautiful animals. Yet I have many times examined a field where they have been feeding, and seen the crop later on when ripe, and the damage done has appeared to be extremely slight, while the owners complaints of probable ruin have rested on the flimsiest foundation.

This partiality of theirs for raiding crops has been both the excuse for the destruction of the antelope, and the principal means of it, for they come into the young crops in the evening and early morning, then usually retire for the day into thorn jungle where they are hard to find and harder to get up to for a quiet shot without disturbing the herd. In the autumn they lie up in the high millet, jowari and bajra, and it is then that they fall victims to poachers, who drive them into high nets.

Stalking is nearly always done in the cold weather, after the cutting of the millet and before the wheat has grown high enough to hide the bucks when lying down ; so they can be seen from far off, and cover for stalking is almost always available in the shape of scattered thorn trees, irrigation channels, sandhills and straw piled by disused threshing-floors, so that a stalk is rarely difficult to carry out.

Yet an old buck is wary enough, and it is none too easy to get within the necessary 150 yards to ensure a safe shot : 300, yes, or even 250 before he will raise his head and wheel to stare, white chest outlined in black, beneath glossy black throat, and spiral horns sloped back from above pied face. Then he will swing round, trot a few yards, have another look, and off again ; usually passing through the nearest belt of trees, or behind a stretch of sandhills to finish his feed on other ground a mile or more distant.

If a herd is being stalked the first signs of imminent departure are a series of stiff-legged jumps by a doe, copied by others with little runs between, until the whole herd is on the move. If put up in high millet these leaps will carry the buck well above the 7-foot crop, and are a wonderful sight. They are then no doubt a great aid to detecting danger ahead, but on bare, open ground seem rather purposeless. Often a buck while moving off with the herd, will snatch the opportunity to catch a rival unawares and dash at him with lowered horns, to be met with a rapid turn and the two will push and heave, noses in the dust, until suddenly they realize that they have been left far behind and cease their strife to gallop after the others.

An old master buck is a dreadful tyrant ; strutting with everted eye-glands round the herd, uttering loud challenging grunts, dashing at some ewe a little apart and driving her back to the rest with the points of his horns, or attacking some younger rival. Pugnacity is often his undoing, bringing him within range of the stalker while pursuing a vendetta, and at times the rival may turn out to be a tame buck

belonging to a poacher, its horns festooned with nooses in which both become entangled as they fight, and the wild one falls an easy victim.

The violence of encounter will often break a horn, and bucks which have suffered this mishap will herd together and company with others just approaching maturity which are not yet strong enough to conquer a harem for themselves.

Indian antelope have very keen eyesight, but their sense of smell is not very highly developed, or perhaps the fact of constantly living amongst natives working in the fields has blunted their apprehension of danger from this source. While stalking them in Patiala I several times experimented with walking across or down a steady breeze blowing towards a herd and concluded that 250 yards was about the limit from which warning was normally conveyed.

In judging a head the number of spirals is often misleading : a $28\frac{1}{2}$ -inch head shot by me in Patiala has only three complete turns, while one of $25\frac{1}{2}$ inches has four and a quarter. Blackbuck horns are, of course, measured straight from base to tip and not on the curve.

The safest method of judging is by comparison with the length of the face (a good head will be about two and a half times the distance from base of horn to end of muzzle) or with the height at the shoulder, which is 32 inches.

In taking a shot the bottom edge of the black behind the shoulder is the place to aim for, and it is extraordinary how easy it is to forget the white below this and aim too high : in addition to which the poor definition has a decided tendency towards taking too full a sight, if aim be taken right on the black.

A good blackbuck head well mounted is a handsome trophy, and the mask should be taken off low enough to include a bit of the white of the chest. But the head should not be selected merely for its length : splay, girth, and number of spirals all go to enhance its value.

CHINKARA.—Nearly everywhere that blackbuck are found

those graceful and sporting little gazelles, the chinkara, inhabit the more broken ground: sandhills, rocky ravines, wide gravelly plains, and even the hills up to 4,000 feet are their haunts.

From the deserts of Sind to the top of the Salt Range and Kala Chitta hills they may turn up anywhere except in high grass or big forest. The drier parts of the United Provinces and the Deccan Plateau also hold a good many, and in Eastern Rajputana and the Western Punjab they abound.

They are never in large herds, usually in parties of two or three to ten in number (though I once saw twenty-three together on the Hissar-Bikanir border), and, though apparently confiding, they have managed to maintain their numbers where blackbuck have been reduced by two-thirds or more.

Their small size, only 26 inches at the shoulder, and sandy colouring have a great deal to do with this, but their restlessness, expressed by the ever-twitching black and white tail, and their quick perception of danger, have a great deal more.

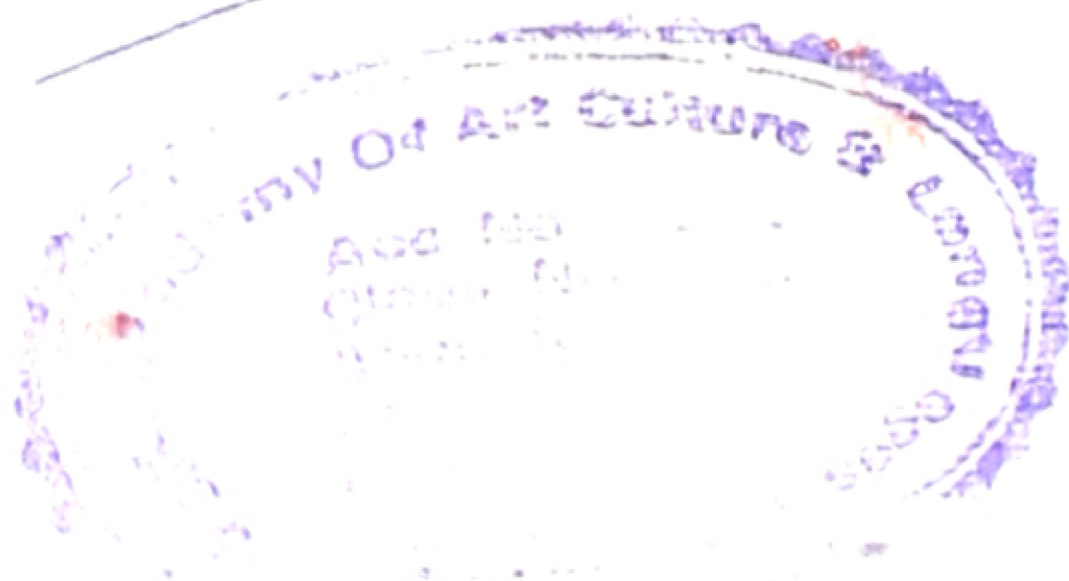
Anyone who, relying on a chinkara buck's apparent carelessness of danger, attempts a more direct and obvious approach than he would normally attempt with blackbuck, will soon see his quarry trot over the nearest rise, and, on reaching that rise to peer carefully over the top in the hope of seeing his 13-inch buck halted within easy range, will probably see the annoying little beast racing off 500 yards away, at a sharp angle to the original line of disappearance; very likely to circle round the stalker to disappear in thorn bush or a field of high millet.

Perhaps a good buck will be seen to slip into a field of millet and the stalker will send a man or two round to drive it out, making a guess that it will emerge within shot by stationing himself at the most likely corner. Having tried this myself quite often, I do not ever remember having guessed right; my buck has always slipped back past the men, or



A CHINKARA BUCK IN THORN-COVERED SANDHILLS

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quitted the millet by a line which gave him sufficient cover to deny any chance of a clear shot.

It is probable that on such occasions it is their hearing which is their principal aid to detect the whereabouts of danger ; for, stalking them for photographic purposes, I several times ruined my chances by allowing my field glasses to knock against my camera, with the resulting departure of the gazelle, although I might be a hundred yards away. Their eyesight is also sharp in the extreme, but their sense of smell so small as to be almost negligible.

It is a curious fact, however, that it is sometimes possible to abuse their confidence and obtain a shot by walking in a gradually nearing arc of a circle, never looking directly at them. It is best to try and make a tree the eventual objective, in order to steady the rifle against the trunk, as the shot will have to be taken standing : if the stalker sits or kneels down the chinkara will be off and be quite unapproachable for the rest of the day.

Chinkara will rarely be found in the middle of large areas of crops, but will feed round the edges, within easy reach of cover. Even when lying up in high millet, there will usually be one edge of the crop adjacent to some thorn jungle.

In Northern India they go much into the millet to eat the small melons which, together with cucumbers, are grown in its shade ; and they may be seen striking open a fruit with blows of a sharp forefoot, then greedily chewing the soft flesh. Foxes often join them at the feast, taking full advantage of the gazelles' enterprise, and I have actually seen the two animals eating the same fruit.

Chinkara suffer much from the larvæ of a fly which deposits its eggs under the skin of the back and hindquarters, so that after removing the pelt it looks as if a charge of BB shot has been fired through it on holding it up to the light. These holes are not visible when the skin is dry, and the grubs do not affect the quality of the meat.

On two occasions, I have been told by reliable observers,

a fox has been seen to sidle up to a chinkara and jump at it, making it spring suddenly aside. The fox has then begun to devour small objects lying on the ground, and the observer, on going to the spot, has found these to be grubs jerked from the hide by the sudden movement of the gazelle.

Stalking chinkara is really good sport in any sort of country, and demands great care in order to get a quiet shot at a good buck. In stony country rubber or rope soles are essential to prevent the noise of one's feet giving warning of the approach, and in sandhills it will usually be found that each mound is covered with low *ber* thorn to an extent which absolutely denies its use for observation, while the usual view obtained of chinkara is the butt-end disappearing round a dune a couple of hundred yards ahead.

If the gazelle have moved on, it is far sounder to try and cut across the most probable line of their departure; for they will almost certainly turn away to a flank as soon as they are out of sight and will then stand and watch the point where they crossed rising ground or passed behind cover.

If a bad guess has been made and the chinkara have turned in an unexpected direction, it is advisable to abstain from trying to correct the error immediately, and watch them until they again go out of sight or settle down where they are: they will very likely continue to watch their original line of retreat, and a withdrawal followed by a wide circle will bring the stalker in line with cover suitable for another attempt.

Judging the horns is not difficult, a good head being twice the length of the ears, though anything over 12 inches is very good south of the Punjab, and 10 inches is shootable. In the Punjab 13 inches is not unusual and I have shot a $14\frac{1}{2}$ -inch in Patiala.

NILGAI.—Where both blackbuck and chinkara are found there will usually be nilgai, though these ugly brutes do not extend as far north or west as either of the other species.

They are also to be found in quite thick forest, both in the United Provinces and Central India.

Where they are plentiful they are a perfect curse to cultivators, destroying more than they eat by cutting up young crops with their feet. Semi-sacred to the Hindus, they can be seen a dozen at a time in areas where that religion is predominant, but Mahomedans keep them down severely. They give little sport to the stalker, and a poor trophy, but their hides provide excellent leather. Nilgai are amazingly tough, and it is a common thing to take half a dozen old bullets out of a big bull.

In forest, and where they are much hunted, they are not easy to get up to, and are often a nuisance, warning other game as they make off. Their eyesight is good, but their sense of smell seems poor and their hearing not particularly acute.

FOUR-HORNED ANTELOPE.—Going southward about the centre of the United Provinces, and in Southern Rajputana the four-horned antelope begins to occur, usually in forested areas; but is often to be found in the rocky, bush-covered hills which jut out of the plains in the south of the United Provinces and Bundelkhand.

They are interesting little animals, both from their possession of two pairs of horns, indicating a most remote ancestry, and their habits.

They are the only animals I have ever come across which drink regularly in the hottest hours of the day, and in the Satpura Hills 2 p.m. seems to be their time for visiting pools in an almost dry river-bed.

Then, while frequently found in the close vicinity of villages (I have seen them within five miles of Jhansi), they rarely enter the crops, though they will actually mix with cattle to feed on the fallen fruits of a "gula" fig tree. They seem to be mainly browsing animals, though I have watched them grazing in the Lalitpur forests.

Their hearing and eyesight are excellent, and they afford

good stalking in open forest. It is essential to have a good look at them before shooting, as the horns are so small and slender that it is difficult to spot a male.

Where chinkara are to be found in forest it is easy to mistake a female for a chousingha, unless the head is seen clearly and the absence of the dark face stripe shows the animal to be the latter species.

Usually chousingha are rather ignored, for the country they inhabit is mainly the habitat of larger game, such as tiger, sambar and bison; but when specimens of these have been obtained, it is well worth trying for a chousingha, and they will test one's eyesight very thoroughly; while the noiseless approach, which is essential to get close enough to make sure of the shot at so small an animal, is by no means easy amongst the dead sticks and loose stones of the country they usually inhabit.

Whichever of these antelope of the plains be the object of a stalk, the pleasure will usually be enhanced by the nature of the country and the climate. For the trip will almost inevitably be in the cold weather, but a few days snatched from the hard work of that season. Perhaps at Christmas time, when the cold mists rise wispily off the green fields of young wheat, drawn up by the rising sun, and the cheery call of the grey partridge rings out from patches of thorn jungle.

A grey shrike is passed sitting all fluffed up on the end of a twig as the hunter sets forth along some small irrigation channel, to the sound of peacocks braying in the village mango tope.

Then shadowy figures are seen drifting about in the mist, a herd of buck raiding the crops. A chilly wait and a good buck is spotted on the far side of the herd, while between him and the thorn jungle are half a dozen chinkara. A nice problem for the stalk, as from that side alone can an approach be made; the first villagers will soon be out in the fields and the herd on the move. A wide circle is made to the east of the herd, to get the rising sun in their eyes, and then four

grey cranes are put up, as the stalker rounds a clump of *kikar* trees, and go off with clanging cries, so that a much-grudged ten minutes is spent crouching behind cover, until the raised heads go down again and the herd feeds with recovered confidence.

Another move and an isolated sandhill is reached, via a bit of *ber* thorn, and the stalker crawls halfway up the slope, acquiring a thousand clinging burrs which prick abominably, to peer over the edge. The herd is nearer to him, only a little over 200 yards away, staring back at two Sikh villagers driving a pair of bullocks to work the well which irrigates their fields. Hope rises, but a few of the does begin to walk towards the thorn jungle; the whole herd follows quietly, the big buck marching proudly behind, his horns bobbing up and down, and all appears to be lost, for their line will take them out of reasonable shot. But the chinkara prefer the shelter of a group of sandhills outside the thorn jungle and nearer to the hunter, break into a fast trot and passing the head of the herd, draw them after them. The does begin their curious stiff-legged leaps, and soon the whole lot are trotting after the chinkara on a line that will bring them within a hundred yards of the stalker, who crouches, cold and burrs forgotten, tensed for the crucial moment. The chinkara and the leading does pass his sandhill, and some of them catch sight of his prone form, come to a halt and stare. The buck falls to a walk and then stops, as do the rest of the herd.

They begin to move off again, faster this time, a steady bead is on the centre of the buck's chest and, just as the does nearest him again begin their curious jumps, the trigger is pressed and he drops stone dead.

If a photograph is the object, it will not be so easy. The stalker will have to sit up to use his reflex finder, the camera must be clear of all grass and thorn bushes, and, if the sun is behind a cloud, a photograph with a long-focus lens will be impossible except when the buck are at a halt; for slow exposures are essential in such early morning light.

But whether the result will be a good pair of horns, or a good photograph, or there be no result at all, the joy of the sport remains to incite us to another try.

MUGGER.—Of the two inland species of crocodile which infest Indian waters, the Gharial, or fish-eater, with the long, thin snout is the one most generally known; for it is this species which is most often to be seen basking on sandbanks of a Northern India river, with its mouth wide open, so that the upper jaw, with its knob on the end, looks like a club stuck into the sand by the handle. It is this species also which grows to the largest size, and which provides most of the crocodile leather of week-end sportsmen. Probably the Sarda River, in the Eastern United Provinces, produces the largest specimens, and enormous ones of 20 to 25 feet in length may be seen on the sandbanks above the railway bridge on the Mailani-Gaura Phanta line.

Their name of fish-eater is supposed to indicate their harmlessness, as far as living humans are concerned, but it would probably be most unwise to give the bigger ones the benefit of the doubt by bathing in their company. It is by no means uncommon to find women's bangles in the stomach of one (one of 13 feet, shot near Datia, had just that number of bangles inside it), which are often assumed to have been absorbed when eating a dead body; but the probability is quite often that the so-called harmless Gharial was responsible for the death. That there are nearly always blunt-nosed mugger in the same waters with the long-snouted has generally caused the blame of the actual killing to be assigned to the undoubtedly more dangerous species. As both species have a habit of stowing a corpse in some underwater hollow in the bank, or thrusting it into the roots of a tree, until it is thoroughly ripe, it is always possible that a gharial may feed on a mugger's kill while the owner is away.

There have recently been complaints in the Indian newspapers of the impending extirpation of both species of crocodile by skin-hunters, and some lamentations among zoologists

on flimsy and debatable grounds. That parts of the United Provinces have been cleared of these pests would hardly seem to be a cause for sorrow, but that there is any immediate fear, or hope, of their annihilation anyone who choses to walk a few miles along the bank of the middle Ganges at noon in the cold weather will soon be in a position to contradict. The Sarda, Chenab, Dessan, and Sutlej are other rivers whose lower courses afford almost unlimited sport to the Sunday seeker after material for suitcases, and after the early morning attempt to stalk blackbuck or chinkara, the hotter hours of the day may be profitably and usefully employed in reducing the number of the saurians which come out to bask as soon as the sun is sufficiently warm.

To the novice the log-like object lying at an oblique angle to the water and, probably, with one end almost touching it, usually presents an appearance calling for little care in the stalk. He has probably been told the usual bunkum about the resistance offered to a bullet by the "armour" of a crocodile, and concerns more with the probable result of his shot than with the obtaining of it. It may disconcert him at first to discover that there is hardly any cover within range for an accurate shot, but the complete inertia of the target satisfies him that little care is necessary.

Accordingly he moves off, makes a small circuit to put a bush between him and the mugger, then walks up to it and puts his head over the top. Strange, the mugger is no longer there.

He walks a mile further and finds two more lying on a sandbank, and this time uses an old dry channel in the sand to cover his approach and cautiously pushes his head over a heap of driftwood. One of the log-like objects has shifted a little and is now half in the water, but both seem quiescent. Range about 80 yards and the rifle is slid over the top of a dead branch. Instantly the one in the water vanishes with hardly a ripple, while there is a rush from the other and only a loud splash to mark its disappearance. If

a mugger is lying on a shelf above the water it will fling itself in backwards in one movement.

Several experiences like this will give the stalker considerable respect for the wariness of the mugger, long-snouted or blunt-nosed, and make him realise that their sight and hearing are acute in the extreme, while they have also a very efficient sense of smell which demands a constant regard for the direction of the wind.

A close approach is necessary to ensure an accurate shot ; not because of the protective nature of the " armour " of a crocodile, which can be cut with a penknife when on the beast, though it dries very hard, but because unless the mugger is paralysed by the shot, it will get back into the water and then good-bye to that suit-case. The best shot, to my mind, is that which places the bullet at the junction of neck and shoulder, which will destroy all motive power forward and probably kill the reptile outright. If there is any further movement break the back at the thigh joint and your mugger is practically in three parts. As the skin for your suit-case is taken from the belly no fear of spoiling need deter you from putting as many bullets as may be necessary into the business of anchoring the provider thereof.

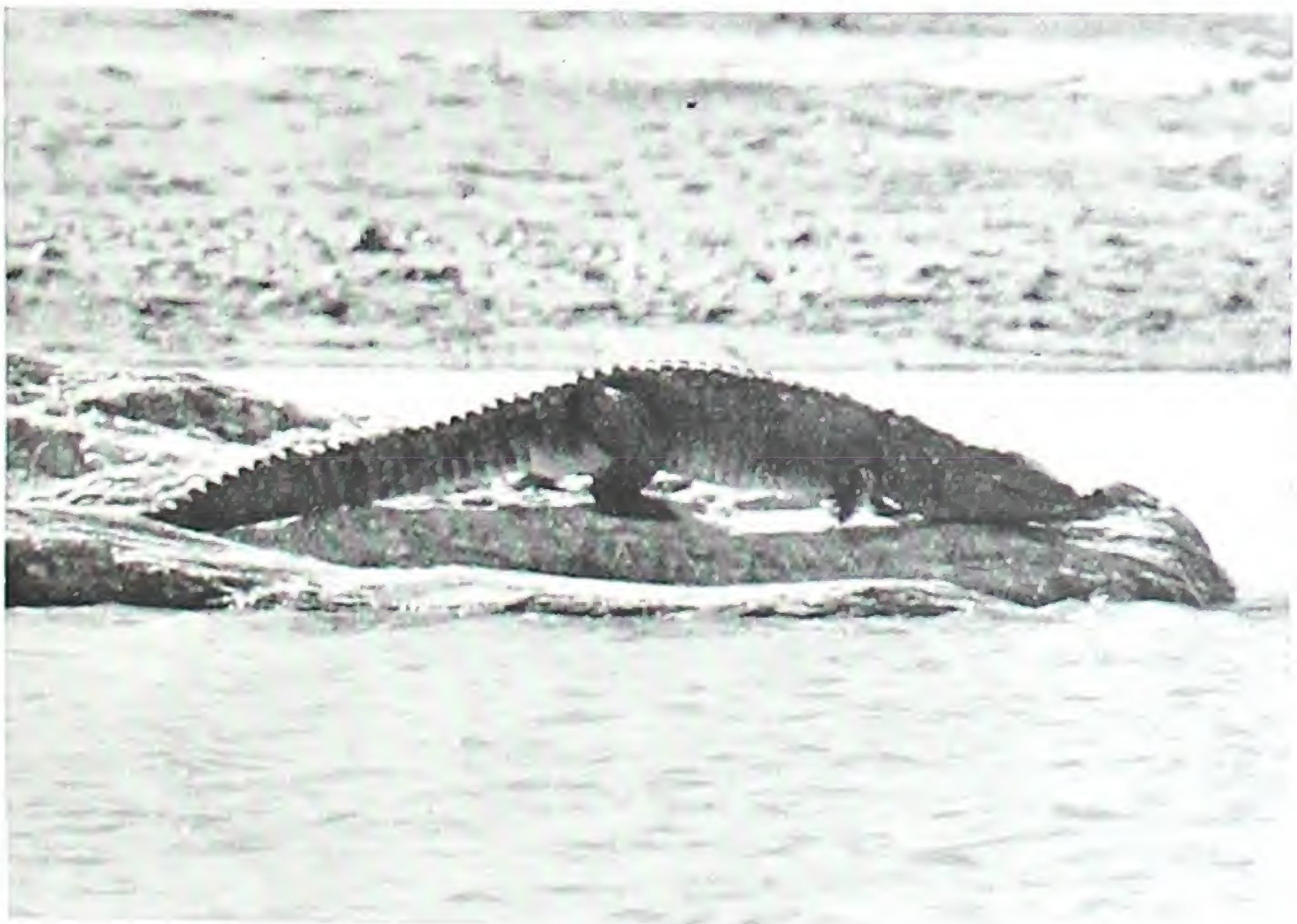
Floating down in a boat will usually give closer and easier shots, and facilitate the recovery of the corpse, but deprives one of the pleasure of the stalk. Whatever method is adopted there is no necessity to put any limit on one's bag, for there is no more destructive agency in wild life than that of the mugger in India.

In the big rivers they probably do little damage, except to the fish, although they are a constant menace to human life ; the occasional removal of a bullock or a goat can hardly be chalked up against them, for India is much overstocked with both quadrupeds.

Consequently the long-snouted saurian cannot be accounted the horrid criminal which his broad-snouted relative undoubtedly is. For the gharial sticks mainly to the big rivers,

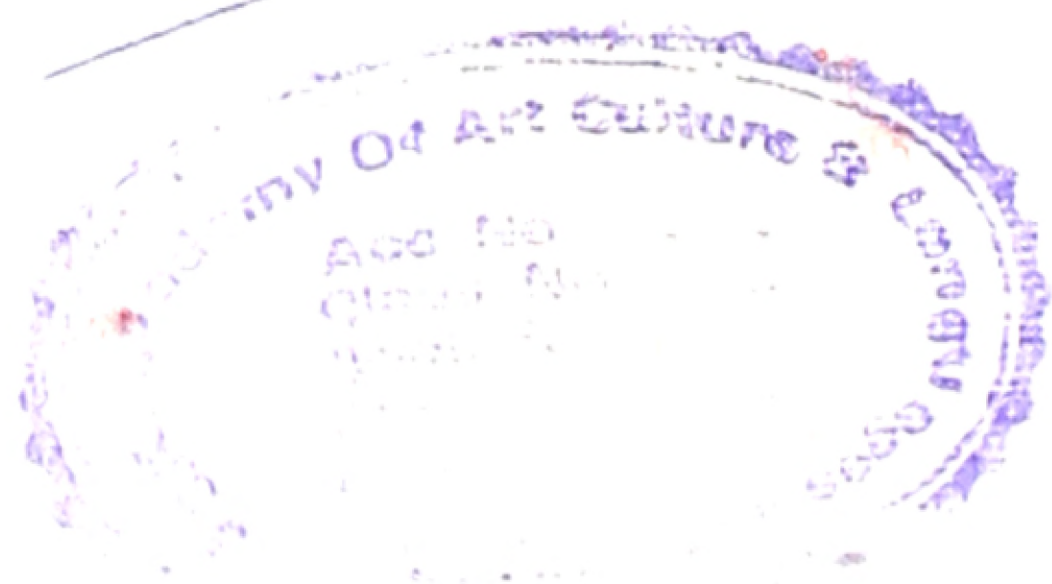


A MUGGER COMING OUT TO BASK ON A ROCK



A MUGGER LEAVING HIS BASKING ROCK AT 4 P.M.

Cultural Academy



while the true mugger thrives in every marsh, jhil, tank and small water-channel, where they lie in wait for any living thing which they can master, which means anything smaller than a full-grown buffalo. Every animal in the jungle comes to drink at times, and is liable to fall a victim, the young in particular, and no bit of water seems too small to hold a mugger, while they are great travellers, moving overland at night, and when their pool begins to dry up, shift to another. Most of us have had our duck shoots spoiled by the knowledge that our dog, without whose co-operation the shoot is never quite the same, cannot be allowed to take his full share in the day's sport on account of the suspected presence of these horrible brutes, and, in recent years, I know of a case near Jhansi when an officer had a much-prized spaniel taken in a water-channel a few feet wide.

But there is one habit of these reptiles which enables us to repay some of the anxiety and discomfort which they cause, and that with excellent sport thrown in. From 10 a.m. to 4 p.m. they come out on the bank of a marsh to bask, and lie in lairs in the grass, with the dual purpose of warming their cold blood and waiting for any small animal which may pass along the bank or come to drink. Then is the time to stalk them. One morning in Kanara I received two nasty shocks within the hour; I lost my footing and slid down into the bottom of a small, grass-filled gully while investigating the tracks of a tiger. As I fell a tawny-and-white animal rose in the grass beneath my sliding feet, and I thought at first it was the tiger. It was only a chital, but when a little later in the morning I slithered down the steep bank to the rocks by the Kalinadi River, and a rock almost beneath my feet turned itself into a 12-foot mugger and rushed into the water, I felt like going off to see a heart-specialist without delay. I have had my own back to a certain extent since then, for I dislike being frightened by a nasty scaly horror, and this stalking amongst the grass of river-banks has additional zest drawn from the spice of vengeance.

It is not often one gets one's mugger the first day, it hears one and slides into the water before close range is obtained. But mark the spot, which usually smells abominably, and stalk it next day at noon. A very close approach is necessary, for the cover is thick and a clear shot is probably not obtainable at over 5 or 6 yards, but there should be no doubt about a clean kill and there is one treacherous destroyer the less. In Kheri I have killed five mugger in four days within a quarter of a mile of my camp, in this manner.

This camp gave me an insight into their ways and their rapidity of attack, which was interesting in the extreme. Twice I saw a mugger attack waterfowl with so sudden a rush that his snapping jaws surged three feet out of the water as they rose and accounted for a couple, while the brute seemed to submerge one or two more with his rush and snap them up in the swirl of attack. The rapidity of the attack was hardly believable when remembering the sullen logs lying on the sandbanks of the Sarda 20 miles away, and their weird bubbling roar sounding at night from the deeper channels of the marsh added to the innate disgust and fear one feels for the brutes.

Photographing them in Sind was much more pleasant and very interesting. Here I found half a dozen living in a pool a furlong in length, which was formed by the damming up of an intermittent stream to water the precarious village crops. The stream, one can hardly call it a river, ran, tamarisk-bordered, through an almost desert country; only appearing above the sand and shingle at intervals and nowhere having a flow of more than 5 inches in depth; while there was 20 miles of dry river-bed above its junction with the Indus. Yet, like most of the similar streams in that country, it held mugger in every pool with a depth of over 5 feet. There was one 10 miles above that where I took my photographs which was less than 5 yards wide and 15 yards long, yet it held a mugger which took a goat once a fortnight, then disappeared for ten days to digest its meal

under an overhanging shelf. The goatherds, who had no other place to water for several miles, did not seem to mind very much, and, after all, there are plenty of goats in India.

I devoted my attention mainly to the biggest mugger in my pool, one about 9 feet in length. It was accustomed to bask on a point of rock about 40 yards from the east shore which was edged with tamarisk, while the other ran back in a gentle slope of open sand and shingle, without cover for 80 yards. It seemed an easy proposition to get some pictures, but it took me five days to get them.

The first, that of the mugger basking in the afternoon, was simple. The Sindhi with me had frightened it in the morning when first showing me the place, and a long wait only resulted in a cold pair of eyes inspecting me from the water wherever I hid in the tamarisk. But lunch in camp, and a return at three o'clock found him fast asleep on his rock. An attempt to take him as he departed was spoilt by camera movement.

Next day I hid betimes in the tamarisk, waiting for him to emerge on to his rock. At 9.45 he appeared swimming down the pool, and leisurely patrolled the margin inspecting for possible hiding-places. He stopped opposite me, 5 yards away, just the eyes showing above water, and stared until I felt a fool and departed. I came back that afternoon and got him as he left his rock. Next morning I took a picture as he lay there at noon, his head towards me, and a cow peacefully nosing amongst the shingle for stray blades of grass on the shore 20 yards beyond. I noticed that he invariably lay head to the east in the morning and, about one o'clock, changed round and warmed the other side in the sun.

Once more I tried to hide myself to get his picture as he emerged on to his rock, and failed ignominiously, but the next day, by staying back under cover while he made his inspection and then getting quickly forward as he swam

leisurely towards his rock, I succeeded. As I pressed the release he looked back over his shoulder and, although I was ensconced in the drooping tamarisk, in the tenth of a second he had flung himself backwards into the water with a resounding splash. That mugger gave me a greater respect, though no greater a liking, for his kind than I had before.

This respect does not deter me from advising all and sundry to slay mugger where and when they can, making sure of every shot.

CHAPTER VII

THE DEER OF THE PLAINS

SAMBAR.

(*Cervus unicolor*.)

VERNACULAR.—*Sambar*, Hindostani ; *Maha*, Terai ; *Dhank*, C.P. and Southern U.P. Height at shoulder 52 to 55 inches.

COLORATION.—Dark sepia brown, shading to yellowish under chin, throat, thighs and tail. They fade lighter in the hot weather. Old stags usually very dark.

COAT.—Heavily maned with a long coarse coat. Ears large.

HORNS.—Simple recurvine type of brow tine and bifurcated top. Length up to 50 inches but 40 inches a very good head in N. India.

DISTRIBUTION.—Northern limit Jaipur State, eastward to Gahrwal. Thence southward throughout India, Burma and Malaya.

CHITAL or SPOTTED DEER.

(*Cervus axis*.)

VERNACULAR.—*Chital*, Hind. ; *Jhank*, U.P. Height at shoulder 36 inches.

COLORATION.—Light chestnut spotted with white. The ground colour fades to reddish khaki in the hot weather. Throat and underparts white, and the long tail heavily fringed with white.

HORNS.—Usual recurvine type, varying much in spread and amount of curve. They are much given to throwing snags on the brow tine, and freak heads with long extra points

arising from the base of the brow tine are not uncommon. Record length 40 inches.

DISTRIBUTION.—From Jammu, Central Rajputana on the north, southward throughout Peninsular India. Not in Assam or Burma.

HOG DEER or PARA.

(*Cervus porcinus*.)

VERNACULAR.—*Para*, Hind.

DESCRIPTION.—25 inches at shoulder, low and heavy in build, with head carried low. Dark brown in winter, paler in summer, when it has white spots on the body. The young are spotted. The underparts are pale; inside of ears and underside of tail white.

HORNS.—Simple rusine type, up to 22 inches in length in India, but 16 inches a good head.

DISTRIBUTION.—The islands of the Indus River below Dera Ismail Khan. High grass country of the S.E. Punjab, the Dun, and the Ganges Kadir. Thence along the foot of the Himalayas to Northern Bengal. Plentiful in the big river valleys of Burma, and in lower Siam.

SWAMP DEER or BARASINGHA or GOND.

VERNACULAR.—*Gond*, U.P.; *Barasingha*, Hind.; *Gaoni*, C.P.; *Bhila*, Assam.

DESCRIPTION.—45 inches at the shoulder; colour brown, merging to yellowish on the underparts. They become lighter and develop a strong rufous tinge in the hot weather. The shade of brown is very variable, and hinds are usually lighter in colour than stags. The young are lightly spotted. Coat very coarse.

HORNS.—Described below. Record length, 42 inches from the C.P., but 40 inches has still to be recorded from the U.P., and 35 inches is a good head anywhere.

DISTRIBUTION.—The Eastern Terai and Northern U.P., Western Assam and Northern Bengal. Locally in the south and east of the Central Provinces.

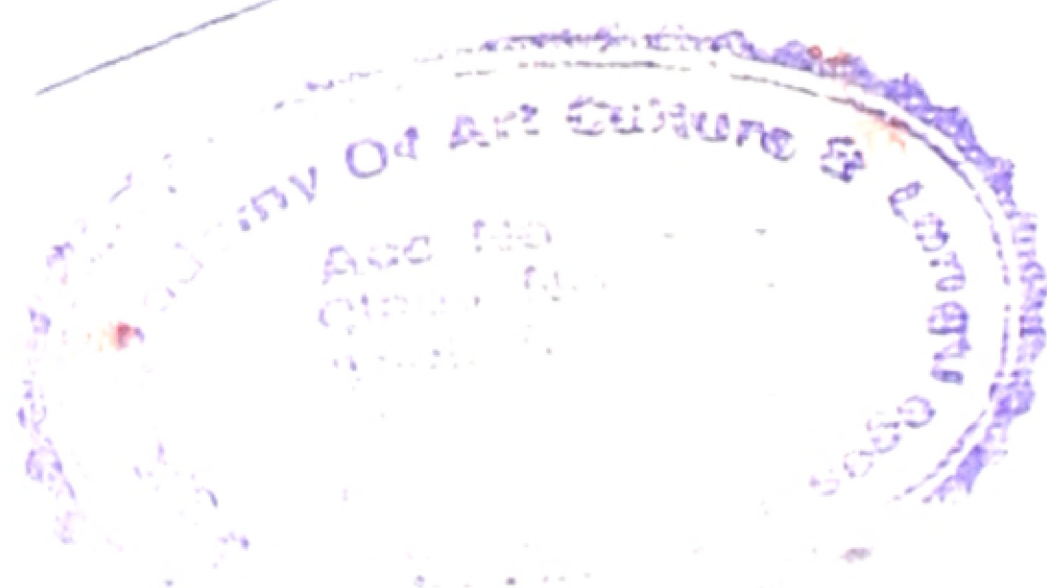


SAMBAR, SOUTHERN UNITED PROVINCES



CHITAL, NEPAL BORDER

Cultural Academy



To the average Briton the sport of stalking is intimately connected with the red deer, and, knowing that there are several species of deer in Northern India, he will probably think that they form the principal object of the stalker in that country.

Unfortunately Indian deer as a rule live in forest, and still-hunting is the method of hunting them, but there are districts where, at certain seasons, the deer can be stalked; and as they provide the finest sport when hunted under these conditions, and stalking is most favourable to the scientific preservation of the species, every encouragement should be given to those who follow this method of pursuit.

The sambar is an inveterate lover of cover and, though fine sport may be had stalking them on the open slopes of the Nilgiris, it is rare in the extreme to find them in Northern India in country favourable to this form of sport.

Still it is possible, and I have had good stalks on the open plateaux above the Dessan River in the United Provinces and in the low hills of Eastern Rajputana.

It is, of course, invariably a very early morning affair; for sambar feed back into cover almost immediately after sunrise and must be intercepted, the object of the stalk being to cut across their line of retreat, and it must be carried out at fairly high speed.

The Rajputana hills are mere outcrops from the plains covered with acacia thorn, grey and leafless in the cold weather. It is essential to be on some commanding point by dawn, and well do I remember a scratchy, stumbling, uphill walk in the dark on a December morning, half an hour's wait on a rock that seemed all sharp edges, and the spotting of a good stag a quarter of a mile away across a bush-filled valley. Then more scratches as we worked through the jungle round the head, and out on to the only point from which he was visible; an impossibility if we had been below him or on the same level. The old devil had lain down on a knoll amongst the thorn, with his head away from me and was about 150 yards

away, but the bullet took him through the nape of the neck and his head just went down; he never even rolled over, he died so peacefully.

The Rajputana heads are not good, about 36 inches being the limit, those of the Himalayan foothills are still poorer and the "Jarao," as sambar are called in Kumaon, are no better; so it is most improbable that a 40-inch trophy will ever be bagged by stalking in Northern India, but the sport is good.

Chital really do give good stalking in the Northern United Provinces, as they come out to feed in the open, morning and evening, and even in March I have seen them grazing up to 10 a.m. and be out again at 4 p.m.

While chital may be found clear of velvet at any time of the year, the best stags are usually in hard horn from mid-March to early June, and as the new grass is then springing after the winter burning, there is no better time to combine good sport with the chance of a fine trophy. For the chital of the Kheri and Bahraich districts average bigger than in any other part of India, 35 inches being not unusual and 40 inches by no means impossible, for the record of that length came from Bahraich. Why the chital of this area should carry such fine heads and the sambar, a very much bigger beast, average under 30 inches, is an unsolved problem.

The best areas for chital are invariably near water, and the open park-like country which they affect is very pleasant hunting. The chief difficulty in stalking them is avoiding outliers, for a herd often has detachments scattered about, and their spotted coats blend so well with patchy sunlight that it is far from easy to avoid jumping them.

Often one is guided to a herd by the braying of a challenging stag, but even when a good head is spotted, a shot is far from a certainty. They have the usual habit of feeding down-wind of thick cover and keep a sharp eye on open approaches. In the dry season dead leaves and sticks rustle and snap underfoot, and chital, whose principal enemies are

leopards, have sharp ears. They will often gather under some big tree where monkeys are eating wild fruit, and, as monkeys always do, wasting twice what they eat. The chital come to eat what the monkeys throw down, and the leopards come intent on a meal off monkey or chital. One of the last stalks I had after chital was after a herd feeding on figs thrown down by monkeys, and it ended in my shooting a leopard intent on the same object.

I have found chital exceedingly hard to photograph by fair stalking, though it is easy enough to get pictures from a hide over water, or from an elephant. It is not that the approach to within range is very difficult, but that there always seems to be some waist-high bunch of grass obstructing the lens, which would be no obstacle whatever to sighting a rifle. However, I have not devoted much time to them, and they make such beautiful pictures that it is well worth trying by any keen photographer.

The plains' deer which have given me most sport are swamp deer, known as *gond* in the United Provinces.

They are quite the most interesting of the Indian deer, as their horn formation affords good evidence as to the probable common ancestry of all Indian rutine deer.

The first horns developed by a young stag have a bifurcated top to the beam and a brow tine. The next year the back upper tine is bifurcated, and the third year a tine is added halfway between the back bifurcated one and the point of the beam. The fourth year the normal head is completed, a small tine appearing a little behind the point of the beam.

There is then a head of six points a side, including the brow tine, which gives rise to the name of "barasingha" or "twelve-horned," by which the swamp deer is known in the Central Provinces.

The beam of the horn is much more curved than in sambar and chital, and approaches continuity with that of the brow tine; consequently the general formation resembles that of

the horns of the Thamin or Eld's deer, of Assam and Burma, and the resemblance is more marked in that the development of the upper tines of a thamin's horns is generally the same as in those of the swamp deer, though the thamin's points are much smaller.

When a swamp deer stag has reached his prime, the horns often throw out extra points or snags, while the length of the main tines is reduced. This is particularly the case with heads from the Central Provinces, and I have in mind one very fine head in the mess of the Deccan Horse, in which the number of small points on the distal third of the beam, and the reduction in length of the main tines, particularly accentuates the resemblance to an unusually big thamin head.

On passing his prime the horns lose their points in inverse order of their original appearance. Thus the small front tines go first, and the big back tine usually loses its bifurcation and becomes a simple point before the disappearance of the large median tine. On the disappearance of this last the horns are now very difficult to distinguish from those of a sambar, and often lose little in length of beam. I have twice shot a gond stag of this "sambar" type which was 34 inches on the beam.

In 1932 I shot four stags in N. Kheri, which were all past their prime and going back. They formed an excellent series, the first with four points aside on top and the last with two, exemplifying the process of reversion to ancestral type, and the amount of wear on the molars corresponded to the loss of points; showing the increasing failure of the ageing stag to produce dentine and horn-matter.

While the Swamp Deer or *gond* of the United Provinces, Northern Bengal and Assam live up to their name and inhabit swampy ground, the *barasingha* of the Central Provinces do not demand this sort of country but live in forest areas. Wherever they are found they affect high grass and, in the United Provinces, they rarely leave it.

Very lately the curious fact seems to have been established that in Assam the rutting season is in July and August, when the horns, which are clean in October and shed from late February to April, as in other portions of the animal's habitat, are still in velvet. This is entirely contrary to all preconceived ideas of stags fighting for their mates. In the United Provinces the main rut would appear to be in early December, and the majority of fawns are born in May. When collecting a group for the Prince of Wales Museum, Bombay, I found it impossible to get a fawn as young as was wanted, nearly all of them being more than half-grown in January.

Yet the stags utter their curious droning challenge right through the cold weather, and fight furiously at times in January and February: I have picked a 3-inch broken bit of horn-point out of the shoulder of a big stag on two occasions, the wounds being very recent.

Young stags make a curious mewling noise, and indulge in frequent tests of strength, pushing and shoving with loud rattlings of horns but no serious results.

The horns of the dwellers in big swamps are quite white, due to their cleaning off the velvet on the dry grass stems, but in S. Kheri, and other places where they inhabit small patches of swamp surrounded by forest, the horns are cleaned against trees in the ordinary way, and are stained the usual brown by the juices from the bark.

While swamp deer afford good sport by still-hunting in the Central Provinces, their habit of remaining in swamps where the grass is anything up to twelve feet high has led to their being hunted on elephants in their habitat in the United Provinces; and when I first went there I was assured that this was the only way of getting them.

Driving them with a line of elephants seemed to me to be far from a sporting proceeding, leading to indiscriminate shooting and wounded beasts getting away into the high grass to die. Manœuvring them out of high grass with a single elephant needed a little skill at first, the only sign of the

presence of deer often being just the movement of the grass-tops as the animals passed underneath, or the sound of their paddling in the water. Where the grass was not too high, the tops of the stag's horns would show, and the problem then was to force him across short grass or an open channel of water. Unless the whole of a stag's horn is seen, it is almost impossible to judge the head, as the points are fully developed early in life and the value of the trophy is largely in the length of beam.

Having shot several stags off an elephant, I then looked round for better sport and tried stalking them, finding it quite feasible in the marsh and on the open flats where the old grass has been burnt off.

As a rule this burning is done early in January and on into February, and is a fine sight ; a great wall of flame sweeping down-wind, cutting wide lanes in the waving sea of yellow grass, while round it hover scores of fork-tailed Black Drongos, snapping up insects driven out by the fire, swooping into the flame apparently impervious to heat, and even perching on stems already alight.

This burning leaves all the higher ground with a stiff, foot-long stubble projecting in tufts most detrimental to puttees or stockings, but the fire ceases abruptly at any damp hollow, and leaves long lines of high grass edging water-channels, with acres of marsh dotted with patches of open water, interspersed with burnt flats anything from a mile to a hundred yards in extent.

When the new green grass begins to show, the gonds come out to feed on it morning and evening ; but they also come out to lie in the sun on cold days.

One may therefore get a stalk at almost any time of the day, using for observation posts the ant-hills, which everywhere dot the flats, or an occasional tree.

A stalk will often involve a chilly waist-deep wade on a cold weather morning, as most of the really big stags go back to the high grass at sunrise, sunning themselves on mud-

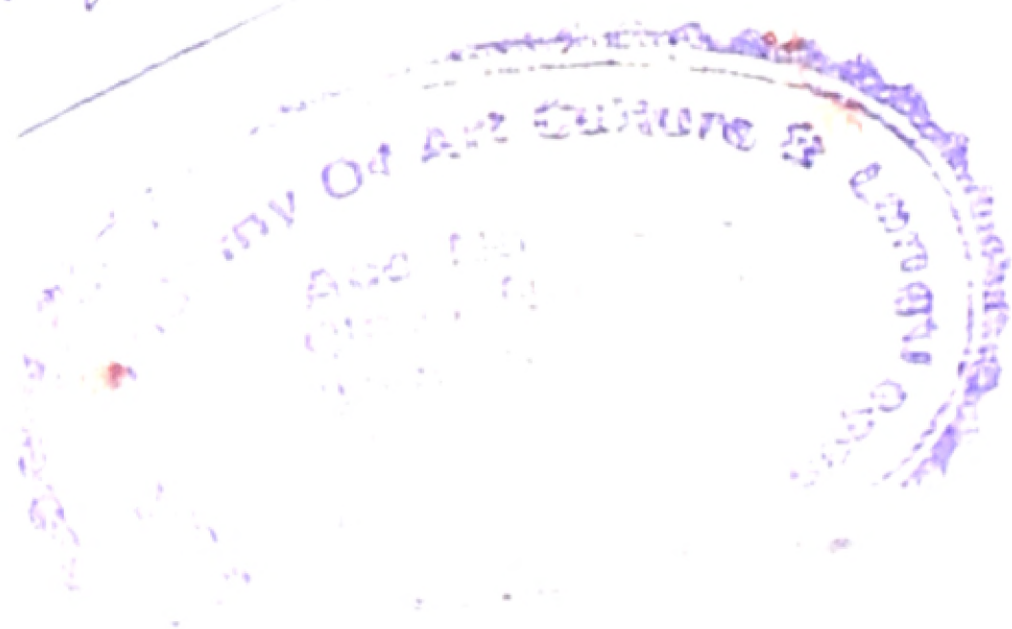


A GOND STAG ON THE ALERT



AN OLD GOND STAG SLIPPING OFF IN HIGH GRASS

Cultural Academy



hillocks in the middle of the swamp, so only give a chance if a start is made at dawn.

When the morning mists are dense, as they often are, it is a curious sight to see parties of gond drifting past in the early light, often only the heads and horns of big stags showing; then comes a great splashing as they enter the swamp, and perhaps the clash of horns as two stags fight a half-serious duel.

In February stags begin to collect in very large parties, the youngsters, which are usually in parties of their own, then joining up with the five- and six-year-olds; but, although I have seen as many as forty stags in one of these assemblies, I have never seen a really fine head among them.

Big stags are sometimes solitary but more often associate with small bands of both sexes, and have the usual attributes of old male wild animals, in that they make full use of the protection afforded by other deer, and will slip away by themselves, leaving the others to confuse matters.

With gond are usually found hog deer or "para."

These small deer, which derive their English name from the resemblance to pig created by their long low bodies, dark colour and equivalent size, are equally with the gond, lovers of cover.

In the lower Indus Valley they are found in thickets of tamarisk and in grass, and are beaten up to a line of guns. They are to be found in any dense cover along the sub-montane tracks south-eastward from Bareilly, and in the Ganges Kadir, affording the same manner of sport as the gond.

In the Ganges Kadir they raid isolated wheat fields, and may be stalked there in the early morning and evening, and I have seen half a dozen at a time in one small group of fields in recent years.

They also feed much on the new grass after the winter burning, but always lie down in cover and not on the open flats, as gond often do.

A further difference in the habits of the two species is that para feed little in the morning in the cold weather, but

come out about one o'clock and continue grazing till dusk ; the only animal I know which does this.

Unfortunately para stalking in the United Provinces is a very short season, as most of the big stags shed their horns at the end of January, there being often several days' interval between the dropping of the two horns. The most northerly district where I have stalked them is the Pathri Dun, near Dehra Dun, and in early March I saw no head over 8 inches. Yet in mid-March 1931, in the northern part of the Ganges Kadir, I saw the finest para stag I have seen in India, though I have seen as big in Burma : I estimated the horns to be 22 inches, and at the same season a 19-inch head was shot in North Kheri, so there is always a chance of a good head in the first three months of the year.

Para are by no means easy to spot, as they stand so low and are easily hidden by the slightest dip in the ground or a clump of unburnt grass. Their hearing is good and, as burnt stubble is noisy stuff, the approach on such ground has to be made with care, and they are rather more difficult to get up to than gond, which seem to use their hearing but little, though their eyesight is far better than that of para. Neither seem to have great power of scent, and I have frequently been within 300 yards of both species with the wind blowing directly to them, without any notice being taken.

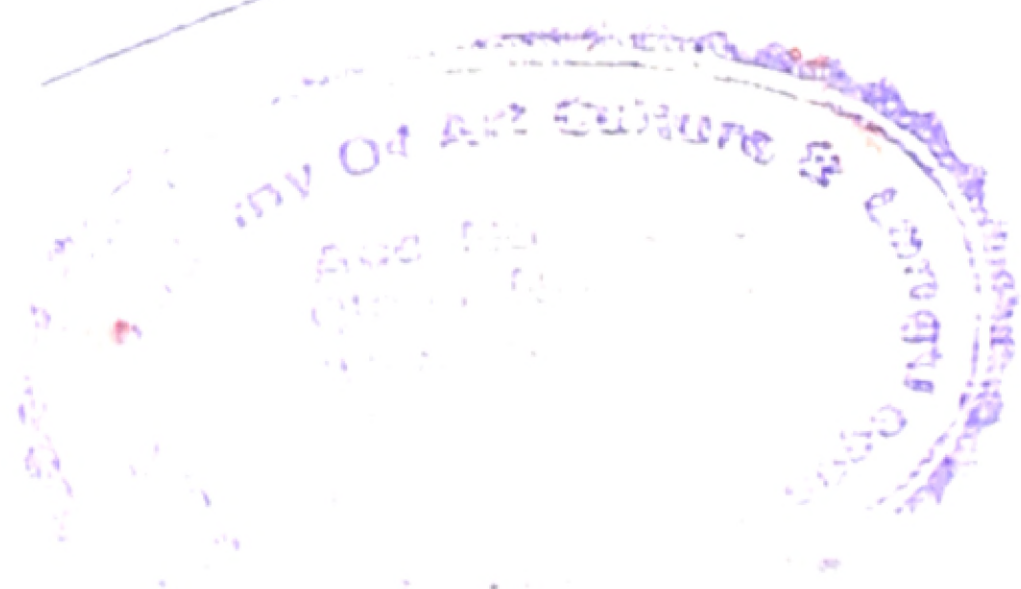
It is easy to understand the gond making little use of their hearing, as the constant paddling about of the herd in the water would drown other sounds ; but one would expect a keen sense of smell to compensate for this, especially as their eyesight is little good to them in very high grass.

It is notable that when gond and para are together, it is nearly always the para which move off first, and the latter are very quick to pick up a hint from each other or from another animal. I was once stalking a para, which was feeding amongst about twenty others scattered over a burnt patch about 400 yards square, and jumped a small boar out of a grass-filled hollow. The pig trotted straight across the patch,



DOE JUST EMERGED FROM SWAMP FOR HIS FAVORITE FEED

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and before he had reached the other side every para was back in the swamp.

Yet para are often curiously indifferent to a rifle shot fired as close as 500 yards away, while gond will immediately go back into the grass. The sight of an elephant will put the whole lot under cover very quickly.

When going off para erect their tails, and the white underside and lolloping gait make them look like enormous rabbits.

They are often a great nuisance when stalking gond, as they have a trick of slipping into the grass at the edge of a water-channel, and then bolting across the open, or, with loud splashing bounds, across the water, alarming everything within several hundred yards. It is peculiarly maddening to have this happen when nearing the end of an early morning stalk which has involved much wading in deep and chilly water. Pig are frequently met with on such occasions and are liable to be truculent, so should be treated with respect, and I have met with both tiger and leopard on similar occasions.

Tiger come into the swamps every cold weather, from Nepal and the Himalayan foothills, and kill a large number of gond ; but leopards are the great enemies of both gond and para, particularly the latter ; and when the grass is burnt there are certain areas where nearly every ant-hill has a ring of bones at the foot—relics of a leopard's kill.

Photographing gond is a peculiarly maddening business, and para are still worse. If it were not for the ant-hills it would be almost hopeless, for, except for infrequent trees, they are the only means of getting above the level of the grass to look for animals, and the only cover for stalking on the flats, where there is no convenient ditch. Even then it is extremely difficult to get clear of grass stems, which the telephoto lens magnifies into vertical blurs, and the ant-hills themselves are usually covered with stiff grass, particularly at the top, and often with fish-hook thorn, which renders their ascent, rarely at all easy, a most painful adventure.

Having got the camera into position the operator will probably have to descend, crawl round to the front and break away intervening stems. He will then discover more stems further out, and another long crawl will be necessary. By the time he is ready to press the shutter-release, he is often black with burnt grass, his face striped like a zebra's, and hands and arms full of thorns : by then his quarry will probably have moved off.

Still it is a glorious life in the early part of the year, from the start in the early dawn, duck quacking in the reeds, black partridge vieing with swamp partridge in ringing challenge, to the leisurely dinner and early bed, with the rise and fall of a gond stag's braying drone or the bubbling bellow of a mugger the last sounds before sleep renders one deaf to everything.

On a clear morning the sun will rise across the waving yellow grass of the marsh, backed by the wall of sal forest marking the boundary of Nepal. Beyond this again the hazy blue of the Himalayan foothills with snow-peaks apparently hovering in mid-air above them.

Strings of duck, pochard, mallard and pintail, criss-cross the sky, and a sarus crane trumpets loudly to his mate.

Little difficulty is there in getting food ; for if duck, snipe and partridge begin to pall, an expedition to the forest will always produce peafowl or a junglefowl, while para are also good to eat.

For the naturalist the ways of marsh birds, muggers, and such rare beasts as the Hispid Hare, are of unfailing interest ; and, even if one day be a failure and the para put away the gond, or the waterfowl alarm the para, or there be a blade of grass right across the developed negative, yet, right up to the end of the trip, there is always another day.

CHAPTER VIII

THE LOWER HILLS

OORIAL.

(*Ovis vignei*.)

VERNACULAR NAMES.—*Urial* or *Hurial*, Punjabi ; *Ps'h* (pl. *psun'h*) and *Dumba*, Pushtu ; *Gad*, Baluchistan.

DESCRIPTION.—Height at shoulder, 32 inches or 33 inches. Colour light sandy red to sandy. Most rams have a black or pied saddle mark. Coat close, with a heavy beard and ruff in winter, more highly developed in the Punjab than in the N.W.F.P. and Baluchistan : the beard may be grey or white, but the ruff is almost invariably black. The female stands 26 inches, has no beard or ruff and carries short upright horns, about 7 inches.

HORNS.—May be of close curve or drooping without any upward turn ; both types being found in the same herd. They are transversely wrinkled throughout their length, with deeper annulations marking years of growth. These annulations show good or bad years of feeding as they are near or far apart. Maximum length $41\frac{1}{2}$ inches from Waziristan.

DISTRIBUTION.—From the “oorin” of Astor (dealt with under shapu) westward and southward along the frontier hills, and on the hills of the Punjab between the Jhelum and the Indus.

SIND IBEX.

(*Capra ægragus*).

VERNACULAR.—*Sarah* (male, *Tehr*) Sindhi.

DESCRIPTION.—Height at shoulder 33 inches, females

26 inches. Females and young males are warm greyish rufous merging to white on their underparts. A black streak down the length of the spine, with an offshoot down each shoulder in some animals. Old males are warm light-grey, and appear almost white at a distance; they have a 6-inch black chinbeard.

HORNS.—Scimitar-shaped and curving back with a wide sweep; rounded triangular in section and ribbed along the front angle, the rib often broken by fighting. They are very big for the size of the body, running to 52½ inches, but a head of over 40 inches is now very difficult to obtain, owing to destruction by poachers. The points of an old buck's horns usually turn inwards. Females have horns up to about 15 inches long.

DISTRIBUTION.—The hills of Sind and Mekran, thence to Asia Minor.

HIMALAYAN GORAL.

(*Nemorhædus goral*).

VERNACULAR.—*Goral*, Kashmir; *Pij*, E. Kashmir and Chamba; *Rain* (nasal) Punjab.

DESCRIPTION.—28 inches at shoulder and sturdily built. Females and young are usually light brown suffused with grey, while older animals turn dark grey; they all have a white patch on the throat and a dark, or black stripe along the spine; the outside of the legs is black.

HORNS.—Black and tapering to a point, lower third annulated, curving back to sharp points and slightly divergent. Up to 9 inches in a male and 7 inches for a female.

DISTRIBUTION.—From the Swat Valley to the N.E. Punjab, and southward along the Himalayas to Assam, on the outer hills from 1,000 feet to 9,000 feet. Live on cliffs and steep hillsides, with cover at hand.

HIMALAYAN SEROW.

(*Capricornis sumatrensis*).

VERNACULAR.—*Ramu*, Kashmir; *Goa*, Chamba; *Yanu*, Kulu; *Thar*, Kumaon and Nepal.

DESCRIPTION.—38 inches to 42 inches at the shoulder, the larger animals in Kumaon and Western Nepal. Coarse shaggy coat of black, merging to rusty red on the legs and lower edge of ribs, then to dirty grey on the inside of the thighs and belly. There are white markings on the face, throat and chest, which vary much in individuals and may be absent. The young are black without rufous markings. The sexes indistinguishable at sight.

HORNS.—Up to 10 inches in Kashmir and $12\frac{3}{4}$ inches in Gahrwal, the horns are black, ringed for their basal third, and, starting in the line of the face, curve slightly backward and outward. I have shot a female with $10\frac{1}{2}$ -inch horns which was 42 inches at the shoulder.

NOTE.—There is a rufous colour phase occurring mainly in a belt across central Burma, but occasionally turns up in the Eastern Himalayas. One occurred recently as far north as Naini Tal.

DISTRIBUTION.—Along the Himalayas from the Kashmir Valley and Pir Panjal to, at least, Bhutan. Serow south of this limit, to Siam and Malaya, may be of different species or races.

BARKING DEER.

(*Cervulus muntjac*).

VERNACULAR.—*Kakar*, N. India.

DESCRIPTION.—24 inches at shoulder, bright golden or foxy red or brown.

HORNS.—Up to 6 inches above pedicel in N. India. Points much turned in and downward, with only a small brow tine. They are set on bony pedicels up to 5 inches high, which are covered with hairy skin and continue down each side of the face beyond the eyes; hence “Rib-faced Deer.” A black line down inside each pedicel merges into a black patch on the face. Outside of legs darker than the body, but the chin, chest, and the inside of the legs are white, while the big fringe and inside of the tail are also white. Fawns are spotted. The upper canine teeth protrude about an inch from the gum in adult

bucks, and are very sharp, being used effectively in defence against, e.g., dogs, and in fights with other bucks. The horns of very old bucks are not shed, and develop into a simple spike, the upper third like ivory, not turning down as in the normal horn.

DISTRIBUTION.—The Himalayan foothills to 9,000 feet, from the Punjab and Eastern Kashmir to Assam and Burma. All over Central and Peninsular India.

OORIAL.—So many of us have begun our stalking career in Northern India in pursuit of oorial, that the right of this handsome beast to be dealt with first among hill game can hardly be disputed. There is no station north of Delhi out of reach of a ten-day's oorial shoot, and many a Christmas leave has pleasant memories of early starts on crisp, frosty mornings, long days searching for a 30-inch ram on broken, rocky hills patched with thorn scrub; and the stalking of some black-ruffed, white-bearded old beast whose curved and wrinkled horns, to excited vision, seemed to come down almost to his knees.

There could be no better "First Reader" for the stalker neophyte than a trip after oorial; and as the ground is so easily accessible, being visible from the train window almost anywhere between Jhelum and Attock, or Karachi and Quetta, it gives valuable experience at little cost. The stalking also, owing to the ground being much broken, is not too difficult, and mistakes are not too severely penalized.

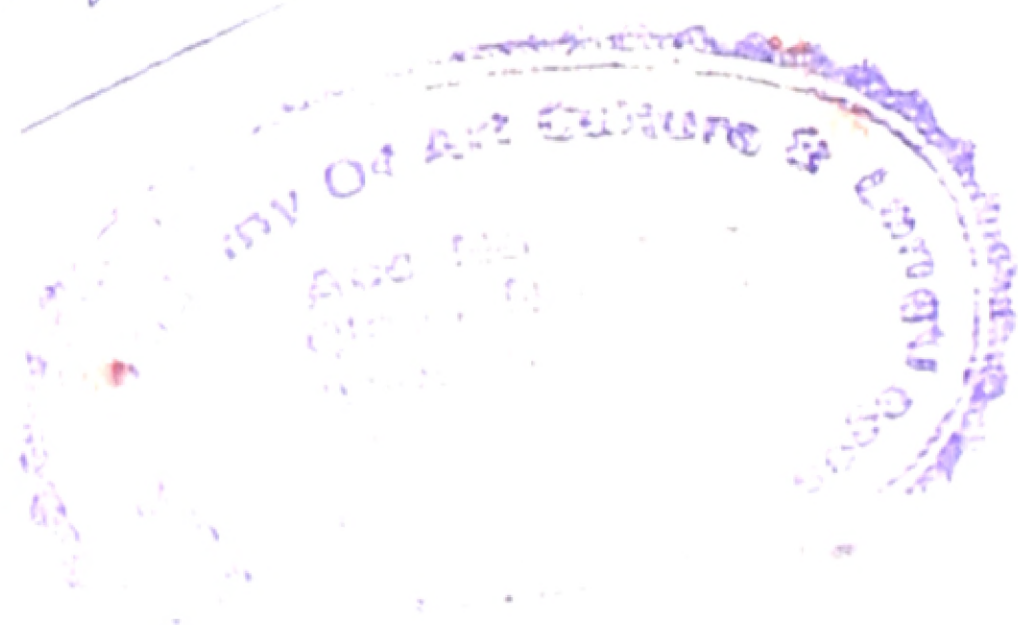
The oorial ground in the Campbellpur, Rawalpindi, Jhelum and Shahpur districts has been divided into blocks; and a permit, obtainable from the local Deputy Commissioner, costs Rs. 10, allows one ram to be shot and is available for a week at a time. The Rawalpindi and Shahpur areas have been much poached, and there are few oorial worth a stalk, but there are still some good heads in the other two districts, though poaching is also rife there, and the appointing of whole-time watchers (at present non-existent) an urgent necessity.

West of the Indus the local populace is so freely armed with



OPEN AND CLOSE-CURVED TYPES OF OORIAL RAMS PHOTOGRAPHED
IN THE SAME SMALL VALLEY

Cultural Academy



modern rifles that the oorial have a severe struggle for existence. They were plentiful in Baluchistan up to about 1930, but have been slaughtered by the natives to such an extent that they are nearly exterminated in some areas, while belated efforts at preservation are nullified by the failure to enforce orders issued.

Yet there is fine sport to be had here and there, with rifle and camera ; though to obtain a good picture of an old ram is very difficult, owing to persecution having forced a persistent liking for cover which makes a clear view of a good beast at reasonable distance almost impossible to obtain. Horns of 30 inches to 32 inches are still obtainable in the Punjab, though anything bigger is rare in the extreme ; but, although oorial are scarcer in Baluchistan, the heads there run bigger, and I had, in 1930, the pleasure of measuring a massive $39\frac{1}{4}$ -inch head, just shot by an Indian officer of the Zhob Militia.

In Baluchistan and Waziristan the oorial seem to have less beard and ruff, and average slightly higher at the shoulder than those of the Punjab. Those I shot twenty years ago in the hills between Bannu and the Indus, were the same size as those of the Punjab, but also had little beard and ruff. They were plentiful there then, but have been almost exterminated since by the local gunmen.

The pied patch on the back, which is common in the Kala Chitta Hills, occurs in the Salt Range ; but I have never seen it west of the Indus ; though a black patch is common there as elsewhere, but nowhere invariably present.

An oorial head matures to shootable length (25 inches) in eight or nine years, and no rule can be given for judging them, as heads with an open curve and big droop occur in the same herd with those which curl up so that the points are level with the eye. It is seldom now that more than one good head is seen with a herd, or the bands of five or six good rams which used to get together after the rut. Old rams are usually solitary nowadays.

On a sunny morning in cold weather old rams may be seen

in the open, but usually, except when feeding in the early morning and late evening, when they will probably be on the shady side of the hill, they retire to the dense cover of a patch of bush ; kikar thorn, wild olive or privet-like *sinetta*, which are common up to 5,000 feet in Northern India. Above that elevation they lie down more often in the open, and approach the habits of their close relations, the shapu of Kashmir, which lie down on big open slopes.

As a rule the ewes do sentry-go, often standing for an hour or more on some commanding point to obtain a better view, and frequently giving away the presence of the herd by making themselves so conspicuous. Their eyesight is very sharp, and their sense of smell good, but, while they pay little attention to displaced stones, their hearing is good and the ring of metal on stone, from nailed boot or iron-shod khudstick, will instantly put them on the alert.

Rams fight furiously during the rut, knocking chunks out of their horns ; the shock of their meeting sounds like the intermittent chopping of a heavy axe, and they are then easily approached. The victor is by no means certain of the favours of a fair lady, for on the many occasions when I have watched several rams pursuing a ewe in season, it has invariably been one of the younger, with 24-26-inch horns, whose wooing has proved successful ; the lovers getting away by speed of foot from the more ponderous old gentlemen.

One delightful memory will always remain of an old 30-inch ram, and a youngster of 24 inches chasing the same ewe on a hill-side covered with rocks and bushes. The chase circled in and out, and round about, the youth hard at the heels of the lady and the old ram labouring in the rear. Whenever the latter got too far behind he would cut across and, as the other two passed, make a violent assault on the youngster which was easily avoided. Eventually the young pair went clean away over the top of the ridge, disappearing into the thick cover on the other side, while the big ram lay down in the shade to recover his wind.

Oorial are never very far from water and drink about an hour before daylight. Often when making a forced march to get back to my regiment at the end of a few days' leave, I have surprised a herd in the black of the morning at one of the rain-water pools which occur frequently in the Salt Range, and they have bounded across the track within a few yards of me to gain the hill-side above.

SIND IBEX.—In Western Sind oorial occur frequently on the same hills with the Sind Ibex, or Persian Wild Goat. But normally the oorial keep to the low ground within convenient reach of water, which occurs in intermittent stretches in the stony river-beds, while the ibex remain high up. The oorial may sometimes be seen on the high ground, but the ibex never come down, and never drink as far as can be ascertained. This was at one time violently disputed by those who assumed water to be a necessity to mammalian life; but blackbuck and chinkara are undoubtedly independent of water in large portions of their habitat, and in some parts of Africa antelope and gazelle are abundant where there is no surface water at all. In Western Sind it is quite usual for no rain to fall for two consecutive years, and the ibex derive the necessary moisture from thick-leaved plants, such as cacti and aloes, as do antelope under similar circumstances in Africa.

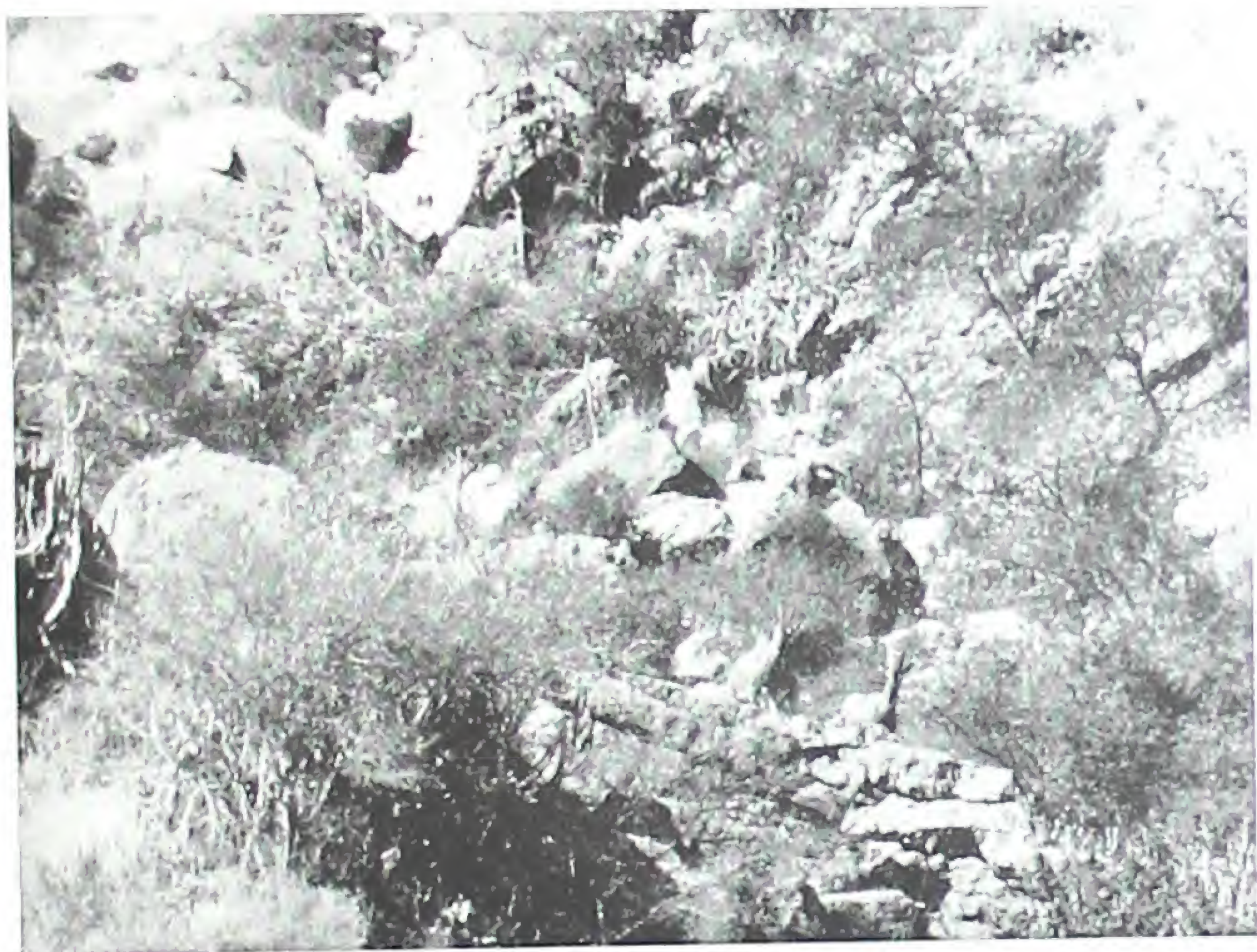
The old male Sind Ibex is one of the handsomest beasts in the world, the warm grey of his coat shading into dark-brown points, the chin beard and proud carriage of sweeping scimitar-like horns all combine to make a band of old bucks, poised in the rising sun on the jagged teeth of the crest of the Khirthar Range, a most memorable sight. It would be thought that the very light coat of both sexes of these ibex would render them conspicuous, but where they are found in India, at elevations below 5,000 feet, they live on white limestone cliffs and stony hill-sides which, subject as they are to perennial sunlight, make a background against which it is far easier to see the shadows of the ibex than the ibex themselves. I have found it difficult in the extreme to pick up these animals in my

reflex finder and focus them properly ; while photographing them in the first half of December 1933 was one constant struggle against adversity.

To begin with, the watchers had been removed (for motives of economy) from the hills where I had hunted them on three previous trips, and, in two years, poaching had reduced their numbers by two-thirds. Unfortunately the bezoar stone of fabled medicinal value is reputed to be found in the stomachs of the old bucks, and certainly this hard secretion is more likely to be found there than in females or young animals ; so they had been shot down to such an extent that I saw no head over 36 inches in seven days' hard work on the hill, although on other trips I had seen heads over 40 inches every day. When I arrived there was a local notability, with a licence to shoot two bucks, busy with an enormous entourage driving the unfortunate ibex, and he shot three wretched little undersized beasts.

Even a venture on the horrible north face of the plateau, 1,500 feet of sheer and barren rock, failed to discover any 40-inch patriarch hiding in the caves, while a leopard was also busy making things more difficult.

The culminating misfortune came on a day when I got within range of a good herd and an aeroplane passed a mile away. All the beasts of the southern half of the plateau, sixty or seventy in number, had collected together and were feeding steadily towards me, the camera already being focused on the leading ewes. Suddenly came the drone of the plane and up went their heads. The drone grew louder, as the plane passed against the rising sun, and they broke and fled in panic, cannoning against each other in their terror, then plunging down into the steep sheer-sided ravines which seam the plateau in every direction. A sad disappointment, and though I followed up one herd and after much hard climbing over sharp limestone, found them in the bottom of a gorge and got a photograph as they crossed the opposite cliff, it did not compensate for the earlier treachery of fortune.

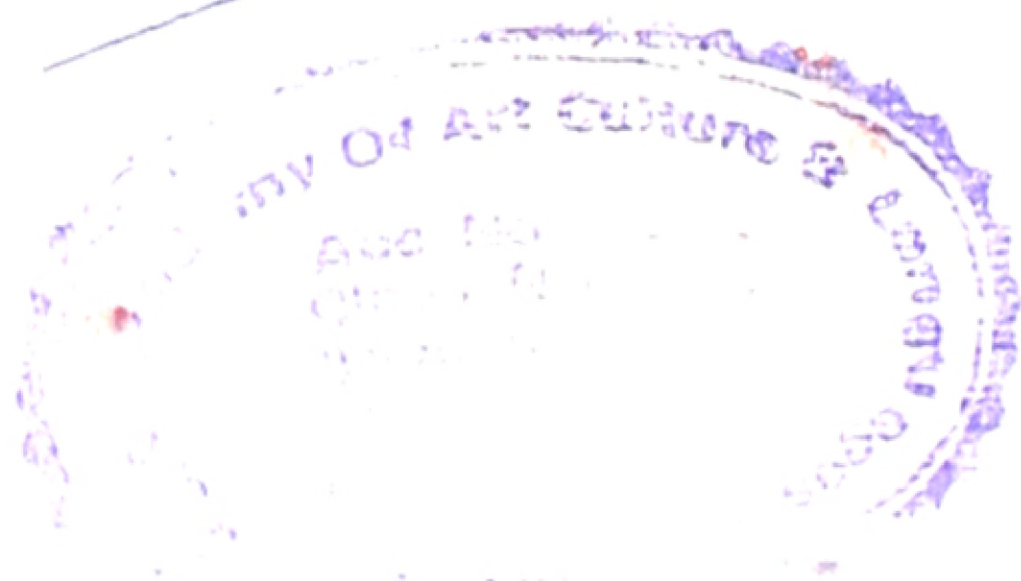


SIND IBEX IN TYPICAL GROUND



SIND IBEX CROSSING A CLIFF IN THE KHIRTHAR RANGE

Cultural Academy



Another day I found two passable bucks feeding on an open hill-side, used all the dozen plates I had with me, then on development, found all but one spoiled by a leak in the changing-bag. Our water also had to be brought six miles on camels, it was unusually hot for early December, and developing and fixing became a nightmare of anxiety as the temperature steadily mounted in the tent.

Each morning saw a start in the dark, a stumbling climb up a couple of miles of stony track to an outcrop 1,800 feet above the camp. Then a wait until the sun rose and the ibex began to appear on the crests around, climbing up from the cliff faces where they had spent the night to graze on the short wiry grass which grew on the easier southern slopes. Then a climb to the top of the main ridge, a long scramble round to stalk those selected; and, probably, the headlong flight of some ewes not previously located, which put every grazing head on the alert and left the landscape bare of every living thing.

The thorns, the sharpness of the rocks, the blazing sun and continual disappointments made every day a weariness; yet I would gladly go back and try all over again, feeling almost and unreasonably sure of success. Thank heaven hope is always there to set against the evil things let loose from Pandora's box.

GOURAL.—While sportsmen stationed west of the Indus find their stalking in pursuit of oorial and Sind Ibex, and mainly in the cold weather, those living near the Himalayan foothills have the nimble goral to help them keep their wits and physique in good working order, and many a British subaltern at a hill station for the hot weather spends his week-ends scrambling after this little beast.

There could be no better preliminary training for more serious Himalayan sport, for goral are sufficiently wary, hard to find, and live in ground which frequently tries the climbing abilities of the sportsman. They are well worth having a few days devoted to them when on more ambitious shoots; such as up the Chenab Valley from Kishtwar, or the lower Wardwan, and abound in both these areas.

I have hunted goural from the Kishenganga Valley to Kumaon, and never failed to enjoy the sport, and the more I have seen of them the greater respect I have had for the ability of an old buck to look after himself.

Their ways of concealing themselves are varied and extraordinarily successful, from the occupation of a small rock cave whose entrance is guarded by a bush, to the mere selection of a resting-place on the hill-side whose ground-colour blends exactly with that of the animal's grizzled coat. Where they do not rely greatly on concealment, they will lie on a crest looking down the lee side with the breeze steady from behind ; if startled, they bound downhill in zigzag leaps, turning the nearest corner which will cover them from danger.

Any steep and broken ground between 2,000 feet and 8,000 feet which has a certain amount of scrub jungle on it, may hold goural, and in Kumaon I found they had a distinct preference for hill-tops of about 5,500 feet, grazing on the west flanks in the morning and the east in the evening. I also found them there in pine forest.

At all times the shady side of a hill is the likeliest find for them, and on big mountain masses the slopes facing north-east seem to be most popular. It is at times astonishing, and also rather humiliating, as the sun gets off a grassy slope at about five o'clock, to see several goural appear on ground which one has searched carefully with glasses for an hour or more ; the little beasts apparently materializing out of nothing, as mahatmas are said to do with their astral selves.

It is very hard at first to distinguish between the sexes, though the limit of female horns is 6 inches, and males run to as much as 9 inches. The horns of a buck are thicker, usually diverge more and are ringed farther up, while, when seen in profile, the tips of a 7-inch head project well behind the ears. Usually the old bucks are solitary ; but females are often the same, and if, when walking along a hill-side, there is suddenly a loud sneezing snort as a solitary goural goes off, and, relying on its being alone, the sportsman bowls it over, his pride in his

shooting will frequently suffer a blow when he finds he has killed a wretched female.

If one resolves to shoot only those goural which have been carefully examined with glasses, the sport will improve immensely ; for it becomes essential to see them first, which is none too easy. Also the numbers of the goural will be maintained for sport in future years.

SEROW.—Closely related to the goural is that quaint and ungainly beast the serow, which looks like a cross between a donkey and a goat, and is a natural link between the goats and the antelopes.

They are so very retiring, living singly or in pairs, almost exclusively on jungle-covered rock faces, that their presence is often unsuspected until they are accidentally disturbed. It is only after rain or an early fall of snow that they ever appear in the open, and they then have a trick, common to goural also, of sunning themselves on a rock or projecting ledge.

Serow can slip away extraordinarily quietly but are the only hill animals I know which make use of little gullies in doing so ; they will rarely cross open ground. They are also very fast movers, especially downhill, and, when wounded, have been known to attack men and dogs, with fatal results.

The serow of Kashmir and Chamba are rather smaller than those farther south-east, and they attain their greatest size in body and horn in Kumaon.

Their black body-colour, with rusty red on the legs, makes them very hard to see when standing in the shade of a bush-hung cliff, and the first thing spotted is often the white insides of the hind legs.

The last serow I shot was in E. Kumaon, and, although I located it about 1,500 feet and only a mile below camp, it completely defeated me the first two days, although I spent an hour within 150 yards of it. For some time I could see its legs under some bushy trees growing amongst huge scree at the foot of a cliff, and thought I had only to exercise a little patience to get an easy shot, as my position apparently commanded

every approach. But the wily old beast had seen or heard me, and eventually slipped past me within fifty yards up a little 6-foot rain gully, whose existence was not apparent from where I sat. Next day an early start brought me before sunrise on to the brow of a ridge commanding the steep and rocky ravine where I had first located the serow, and there was my beast browsing on a bush on the farther slope. Unfortunately I forgot (very foolishly, seeing that I had shot half a dozen serow on previous trips) that they have no light underparts, and aimed too low, hitting it through the chest-bone; it took a couple of hours' hard work, and some stiff climbing, before I tracked it into the dense cover of a jungle-filled ravine and shot it as it dashed out past me, the dead animal pitching headlong over a small cliff into the shallow water of a pool below.

Finding and stalking a serow is far from easy, as difficult ground has to be negotiated and patches of bush are bound to be encountered in which it is hard to keep direction and still harder to avoid making a noise. As serow rely much on their hearing for their protection from enemies the process of acquisition of a trophy is almost certain to enhance its rarity.

BARKING DEER.—Although Barking Deer very rarely give the chance of a genuine stalk, owing to their affection for cover, they are so frequently met with in the lower hills that it is impossible to omit some account of them. Often they will be met with trotting along some hill track, making a curious clicking noise as they go, and usually in the evening, but it is their loud ringing bark, giving warning of the presence of man or leopard, which more often declares their presence. They will often bark when they hear somebody moving in the forest, and keep it up for some time; so that a rapid approach to some point commanding the thicket from which the alarm note sounds, and a quiet wait, will reveal the little foxy-red beast slipping out of cover, pausing to look round bushes or into a ravine before committing itself to passing the danger-spots.

If seen in the early morning they may be browsing, and the

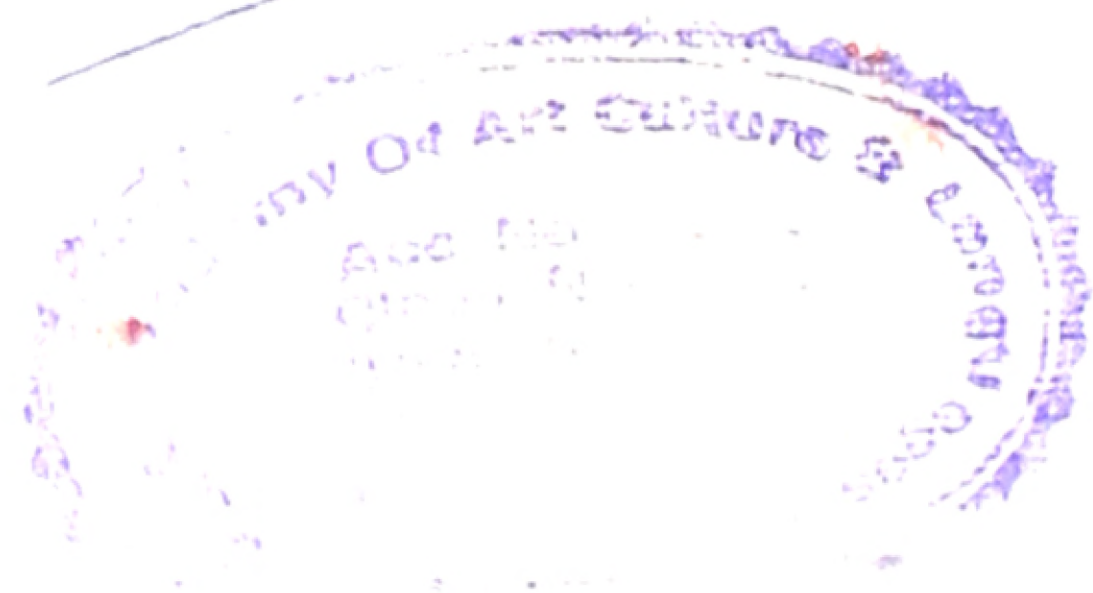


GORAL, E. KUMAON



SEROW, E. KUMAON

Cultural Academy



manner in which the long tongue is wrapped round the end of a twig and the leaves stripped by a straight pull is well worth watching. I was surprised to find that the Kumaonis, who are usually far from observant of the habits of animals, are well aware of this peculiarity of the barking deer; one of them pointing out to a friend of mine bushes on which the little beasts had been feeding, and describing their manner of doing so.

To those who are unable to carry out a more ambitious shoot, a trip to the lower hills is cheap and may be productive of a really good bag. I can strongly recommend East Kumaon, which is approached via the railhead at Tanakpur and then by the road which runs to Tibet through Lohaghat and Pithoragarh; it is forty-five miles only to Lohaghat and a fortnight's marching to the Tibetan border at the Milam or Lipu Leh passes. A shooting licence can be obtained from the Divisional Forest Officer at Almora, from which place the district is administered, and a permit is necessary from the collector if the "Inner Circle" is to be crossed during the trip.

At Tanakpur there is excellent mahseer fishing in February, March and October; but do not stay there in the hot weather months, for it swarms with mosquitoes and produces a peculiarly malignant brand of malaria. There are good shooting blocks all round Tanakpur, but take the Lohaghat road and climb 3,000 feet in ten miles to the crest of the Sukhidhang ridge, where there are always tiger; especially in the hot weather, when they follow the buffalo up, and they then go on to the hills on either side of the Lohaghat road beyond the Ladhya River, which flows from Sukhidhang on the farther side of the ridge and holds mahseer up to 10 lb. or a little more. Beyond the Ladhya there are many hills which hold gaur, serow, and black bear; pheasant, of several species, and leopard, are plentiful.

The road itself is delightful, especially in March and April when the scarlet rhododendrons are in full bloom, and Lohaghat is famous for its fruit.

If a more ambitious trip is wanted, go on across the Sarju River, up again through Pithoraghar, and on to the Milam or Lipu Leh Pass. Here are bharal and Tibetan Gazelle (the only place where these latter come across the main Himalayan chain) yak occasionally appear, and exploration will probably reveal ammon. There are no real shikaris in East Kumaon, and the greater part of the work will have to be done by the sportsman himself, but most villages can produce one or two men who will reveal the whereabouts of game. In 1932 a young friend of mine bagged a tiger, a panther, a black bear and a goural in a month round Lohaghat : his first trip, as he had only been five months in India.

For those whose interest lies in beautiful scenery and varying types of humanity, the road is always thronged with caravans from Tibet : yaks, ponies, oxen, sheep and goats, laden with all manner of merchandise and driven by many types of men ; so that I have met a Sikh trader in ghee, an Afghan cloth merchant from Kandahar, and a Tibetan bringing down his annual clip of wool, travelling together to the Tanakpur bazaar. Then a couple of miles beyond Lohaghat is the finest view in the world—400 miles of eternal snows, from Kamet on the north to the far confines of Nepal on the south, with the great ridge of Trisul and the double peak of Nanda Devi, the highest mountain in British territory, towering in the centre.

Of other trips to the lower hills there are plenty, and much country worth exploring. West Kumaon, Tehri Gahrwal and the Simla Hills will all produce good shooting and much untouched mahseer fishing ; the game being much the same as in East Kumaon but with a very faint chance of a tiger anywhere, and a probable red bear in Tehri Gahrwal.

The upper Sutlej Valley will produce bharal and tahr, of which last beast there are a few in Kumaon and Gahrwal.

Then, in the Kulu Valley, going further north, the variety of game increases, though the tiger may be wiped off the list, and trout fishing is added to the attractions of the trip. Kulu is

approached by rail to Jogindar Nagar, via Amritsar and Pathankot, and there is then a motor drive of 125 miles through grand scenery to the fruit orchards of Manali at the head of the Beas Valley (cars and lorries can be obtained from the Imperial Motor Service, Mandi, Mandi State).

The game in Kulu comprises red and black bear, both of which are fairly common, ibex in two nullahs, tahr, small bharal in one nullah, and gaural. The licence, of which a limited number are issued by the D.F.O., is Rs 25.

Through Kulu lies the road to Lahoul and Spiti, where bharal, red bear and ibex are more plentiful and one is beyond the worst of the monsoon.

It should be remembered, when planning a trip to the lower hills, that the monsoon months are liable to spoil sport by heavy rain and mist.

This particularly applies to Chamba State, which is next on the north from Kulu and has a very good head of game, including all those found in Kulu. It is divided into blocks, about half of which are open to allotment annually, and the thirty-rupee licence is generous to the sportsman. Application for a licence and a block can be made to the Prime Minister, Chamba State, and, if asked, he may allot one of the closed blocks which are not being retained for the Maharaja in person, or his friends.

Chamba is reached by rail to Pathankot, and thence by car to Dalhousie. From Dalhousie it is a long day's march to Chamba, where there are registered shikaris to be obtained, and the personnel of one's camp can be engaged.

With Chamba we are getting to the boundaries of Kashmir and those delectable lands where the ibex run to 50 inches, ammon freely roam the hills, and that king of the cliffs, the markhor, may still be stalked on the great precipices of the Indus Valley or the Kaj-i-Nag Mountains ; so let us pass on to another chapter.

CHAPTER IX

THE GAME OF THE CLIFFS

THE HIMALAYAN TAHR.

(*Hemitragus jemlaicus*).

VERNACULAR.—*Kras*, Kashmir; *Kurt*, Chamba and Kulu; *Jhula*, *Tahr*, Gahrwal.

DESCRIPTION.—Height 38 inches at shoulder, sturdily built, covered with masses of coarse flowing hair and with a fine ruff. Young bucks and females are light brown, and males grow dark with age as a rule, though this is not invariable. The face is dark brown.

HORNS.—Short stout, curved sharply back and then inward in an old buck. They are ridged up to three inches from the tip, and the front edge is strongly keeled. Record head $15\frac{1}{4}$ inches, anything over 13 inches being good. Females have short thin horns.

DISTRIBUTION.—From the Pir Panjal Mountains, south and east to Bhutan, always on the hither side of the main Himalayan chain.

THE MARKHOR.

(*Capra falconeri*).

VERNACULAR.—*Markhor*, Hind. and Pushtu. *Bum*, Astor and Gilgit; *Gharsa*, Pushtu. *Sarah* (also for Sind Ibex), Baluchistan.

DESCRIPTION.—Up to 44 inches at the shoulder, a big goat with a chin beard and covered with flowing masses of coarse hair. Young bucks and ewes are light brown, turning to dark

grey in old bucks, but there is considerable local and individual variation.

HORNS.—Description in text.

DISTRIBUTION.—From the Pir Panjal Mountains northward well into Baltistan, north and west to Chitral and Afghanistan, then south to Baluchistan.

HIMALAYAN IBEX.

(*Capra sibirica*).

VERNACULAR.—*Khel*, Kashmir ; *Sakin*, Balti ; *Tangrol*, Kulu ; *Kin*, Lahoul.

DESCRIPTION.—40 inches at shoulder, a big buck weighs 200 lb. The coat is thick and woolly in winter, and is shed in early summer. The colour is very variable being any shade from dark brown to coffee colour, and all shades may be seen in a big herd. The coat is darker in summer than in winter. The chin beard of a buck is about 7 inches.

HORNS.—Rising straight for about 8 inches from the skull, the horns curve strongly backward, downward and in again towards the base. They are ridged transversely and run to 50 inches in Baltistan and Ladakh.

DISTRIBUTION.—From the Sufed Koh on the west, to the right bank of the Sutlej Valley in Spiti, they are found on both sides of the main Himalayan chain.

MUSK DEER.

(*Moschus moschiferus*.)

VERNACULAR.—*Kastura*, Hind ; *Roos*, Kashmiri ; *Baina*, Gahrwal.

DESCRIPTION.—24 inches at the shoulder and 26 inches at the quarters in the larger specimens. The coat is of dense, thick, pithy hair, the ears very large and rounded at the tips. The general colour is usually golden or greyish brown, with pepper and salt specklings, but is very variable locally and individually. Hornless, but has the canine teeth projecting

up to three inches from the upper jaw in the male. There is an abdominal musk pod.

THE finest test of nerve, endurance and physical fitness is surely to be found in the pursuit of the wild goats of the crags and precipices, and they must be accorded the highest honours of the stalking world.

Of the three species found in Northern India, tahr, markhor and ibex (in order of altitude of habitat) the last is much the best known ; for the ibex has been familiar from the days of classical studies at school, while, of recent years, the cross-word puzzle has made him almost as much a family friend as the emu and the gnu.

But the very name of the tahr is hardly known to any but zoologists and hunters of big game. For the early sportsmen, who shot in the south of India, misterned the Nilgiri Tahr as " Nilgiri Ibex " ; then, in later years, when they carried their operations further north, they met the Himalayan Tahr in Kumaon and Gahrwal and called it also " ibex," so arose the supposition that the habitat of the Himalayan Ibex extended to those countries, whereas the Sutlej River is the southern limit of the species. This error has been copied into several recent works on Indian mammals and big game.

Then, even in India, it is not uncommon for people to confuse that magnificent wild goat, the markhor, with the chukor partridge. True, they are mostly ladies who do so, but I remember a young officer of a battalion newly-arrived at the Malakand sallying forth after lunch with a scatter-gun and, on return, asserting that he had shot five markhor, but had unfortunately brought back only four as a hawk had carried off one of them.

But it is the Himalayan Tahr which is most scandalously neglected, mainly because the trophy it carries is not a large and spreading pair of horns ; and most of us, weakly desiring the plaudits of others, want a large and imposing trophy to show for our hard work, and pander to the scornful attitude

of the ignorant who decry a tahr's head hung on the wall as merely a quite unimpressive pair of horns, indicative therefore of poor sport. The critic of this type, who would probably faint with horror if shown a typical piece of tahr ground and asked to climb about on it, will then retire to his tennis or golf wondering at the pitying smile of the sportsman who has had a glorious time hunting that same tahr, and is rejoicing in the consciousness of that fitness of mind and body which would enable him to act promptly and efficiently in any emergency, what time the critic is still wondering what to do.

For the bush-clad precipices on which tahr delight to live, where the pines grow bracket-wise from the sheer mountain-side, have a way of presenting a series of emergencies to the stalker ; such emergencies ranging from the sudden appearance of fresh animals at a time when he is emulating the spider in appearance and effort, or the giving way of a foothold while his body is indifferently supported by the toe of the other foot and the finger-tips of each hand.

Thank heaven the traverses are not unduly long as a rule, for the cliffs are much broken, and little green slopes of bush and grass occur frequently and are the feeding grounds of old buck tahr. But even so, many a tahr, hit through the heart, rolls over the lip of such a slope, whirls out into space, then, turning slowly over and over, strikes perhaps twice on other ledges, before plunging to irretrievable loss in some roaring torrent two or three thousand feet below. Such ground is not for the weak of head or heart, or those whose physique will not stand the strain of a long and difficult climb ; and a beginning should be made with goural on the lower ground, if tahr or other difficult game have never been hunted before, as a test and for preparative training. From personal experience I know that " nerves " are often due to want of physical fitness, and that a " weak head " can, by arduous practice, often be converted into one which is thoroughly reliable on the worst ground.

There are many incentives to a trip after tahr and not

least of them is the scenery of the country in which they are found. The river-gorges, notably that of the Chenab, or Chandra-Bhaga, afford the grandest and most beautiful surroundings of the glorious Himalayas amongst which the stalker can exercise his craft. Then there is no very long journey to the ground and, at the most, one fairly high pass to cross; then arrived at the journey's end, there is much variety of other game to hunt: such as bears, ibex, gaur, serow and musk deer.

In the winter and early spring these animals, except the ibex, will all be on the lower ground, the bears in the thick forest and undergrowth of the ravines, the horned game on the cliffs. As the snow melts the tahr and red bear follow the ibex and the new grass up to 11,000 feet, the ibex and red bear going even higher, but the tahr rarely reaching the top of the tree-line. The black bear, gaur and serow will stay below 9000 feet as a rule, and the musk deer may be found anywhere they can browse, at any time of the year.

But, to the right-minded, there is no challenge more acceptable than that of an old tahr, as he stands on some grey projecting rock, his long hair waving in the wind, gazing down to the river roaring a thousand feet below, the very poise of him proclaiming his assurance that no mere human can get near him.

The one great help in stalking tahr is that there is nearly always something by which to hold on, and the grass is amazingly strong and tough. This same grass, however, makes stalking almost impossible after the monsoon; for it is then so long that it lies downhill forming a dense and slippery covering on which a foothold is hardly obtainable. Only once have I made an attempt to hunt tahr late in the year and, in spite of the gorgeous October weather, completely failed to enjoy the experience. Three tosses in an hour, only saved by grabbing handfuls of mingled grass and briars, put the final touch to two days unhappiness; and when the Kishtwari shikari, an extremely fine climber, had two dangerous falls in

ten minutes, we called it a day and returned to camp, bruised in mind and body and with hands so lacerated by briars that we could hardly hold our khudsticks.

Unfortunately most of the tahr country is subject to the violence of the monsoon, so tahr hunting, for real pleasure, is practically confined to the months of April, May and June. But at this season it is real pleasure, and in the course of the month of April I once bagged seventeen good heads of seven different species, including five fine tahr.

Judging a tahr head is fairly easy, as the points of an old buck's horns bend down a good deal and project backwards in contrast to the body of the horn. Then an old buck usually becomes considerably darker and heavier with age, and, as there are nearly always several of them together, comparison is possible, while a lone buck is almost invariably a good one. A shootable buck is only very occasionally seen in company with females, except in the rut during the last two months of the year, and, though sometimes solitary, they are usually in small parties of three to six. I once saw sixteen together, on very bad ground, among them at least six heads of over 14 inches, and one patriarch whose horns were not less than 15 inches.

Their trick of splitting into small parties and lying down in patches of forest during the hotter hours of the day can be extremely trying; as they turn up unexpectedly while an approach is being made to other beasts, and the first thing a stalker knows of their presence is a burst of alarm whistles, and then the light brown ewes and small bucks leaping about on the cliff face above him. Usually, led by some elderly female, and in the contrary fashion of elderly females of all species, they will bolt right across the best ground and put everything away for the day.

A solitary old buck, jumped from his resting-place under the roots of a big pine, will usually behave in a much more reasonable way, slipping quietly away to turn downhill, often to double back below the hunter. Sometimes he will go no

farther than the ravine from which the stalker has just come, and it may be worth while going back on the chance of finding him there.

I have not tried photographing tahr, but it should be less difficult to get pictures of them than of markhor and ibex ; for the ground is more broken and tahr are still numerous in many parts of their habitat. The principal difficulty would probably be the angle of the camera, for I have three times had to take my shot with an old buck directly below me and the shikari holding on to my legs to prevent my slipping over : also, on another occasion, the buck I had shot directly overhead nearly abolished me and the shikari as it fell.

MARKHOR.—To pass from tahr to markhor is easier on paper than in the Himalayas, for only in the Pir Panjal Range do they overlap. There is a mountain a little west of the Banihal Pass which holds tahr and a small herd of ibex, then, going west again, the next valley has markhor and tahr, with an occasional serow. Tahr only extend some twenty miles farther, but markhor continue north and west for many hundreds of miles.

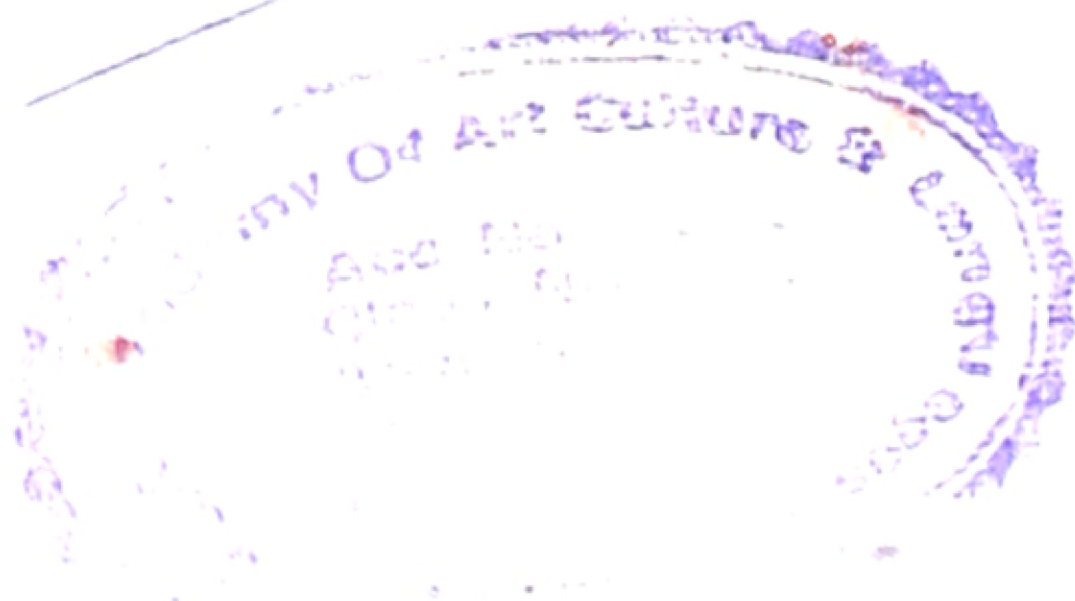
The markhor of the Pir Panjal were the first to receive the attentions of the Nimrods of last century, and shooting ethics being in a crude state which practically amounted to " Shoot what you can, where you can and how you can," they suffered severely and were reduced almost to vanishing point. The Maharajas of Poonch State, the north-eastern boundary of which is the crest of the Pir Panjal, began to preserve them strictly, and they are now once more in considerable numbers and would be plentiful if it were not for poaching Gujars. The heads from this area have also begun to improve greatly, and three over 50 inches were shot in 1932 and '33.

Unfortunately the rather close curled spiral of the Pir Panjal heads led to this type of horn being called the Pir Panjal Markhor ; but the type persists in the Kaj-i-Nag, leading to considerable confusion, especially among scientists whose



STRAIGHT-HORNED MARKHOR, ISA KHEL HILLS

Cultural Academy



experience of the species is confined to museum specimens and books.

The present record head of $65\frac{3}{4}$ inches was obtained in the Moji Nullah on the north flank of the Kaj-i-Nag Range, and resembles an Astor or Baltistan head rather than the more tightly curled spiral of the "Pir Panjal" type.

But these "types," as laid down in the average book of museum origin, are by no means constant and must only be taken as the more usual form of the horns of the particular local race after which they are named; for museum workers still fail to realize that naming new races of ungulates on the strength of differences in horn of one or two specimens, is a very unsound proceeding. There are several messes in India whose collection of markhor heads is far more representative of the species than that of most museums, while the knowledge of the animal itself, of often more than one member of the mess, is far more comprehensive than that possessed by any museum worker.

Going north again, the next range holding markhor is the Shamshibri, with the Salkalla spur on its north side. Unfortunately neglect to carry out real, as opposed to nominal, preservation, has led to the practical extermination of the markhor in this area at the hands of local poachers, and it is not until the Indus is crossed, and Chilas reached, that there are markhor in any numbers. Nanga Parbat may be considered the hub of the markhor world, and this grand and forbidding mountain has markhor on every side of it. To the east they extend up the Indus as far as Skardu, through the Astor and Haramosh districts, and the Gilgit district on the north holds many fine heads. As both the type of the heads, and of the country in which they are found, begins to change from this point westward, some description of these above-mentioned areas is here necessary.

Though there is no easy markhor ground, the nullahs on the right bank of the Indus in Baltistan are undoubtedly less difficult than those farther west. In the former there is little

vegetation and the game is much easier to spy, while, although the actual ground on which the markhor live entails a stiff climb as a rule, there are not the gigantic precipices of the nullahs above Bunji, and which entail steady climbing almost from the first moment of leaving camp even to arrive at a good position for the use of the telescope. There is also a curious difference in the majority of the heads from the two areas ; those of the right bank nullahs above Haramosh often looking just as if they came from the Kaj-i-Nag, their close spiral contrasting with the very open curve of the Haramosh and Astor heads, in which the first outward turn of the horns just above the skull, is almost at right angles to the base of the horn, and the next rising turn almost square again with the first. I have seen a head of 53 inches from the Turmik nullah of the right bank which had a closer spiral than most heads from the Kaj-i-Nag, while of over forty bucks which I saw in the Mushkin nullah on the left bank every one was of the very open type ; consequently, in judging a head, it should be remembered that a good head of this last type will only have two complete turns to the two and a half of the closer spiral.

The left bank nullahs from Rondu to Bulachi have been almost cleaned out by poachers, as there is a village in, or at the mouth of, every one ; but Mushkin, Mayardas and Domel are uninhabited except for goatherds in the summer, and they still hold some grand beasts ; for the poaching is almost entirely done in the winter, when the markhor, which (unlike ibex) do not like snow, come right down to the bank of the Indus ; while during the rut in November and December they are far from being as wary as usual.

But just above Haramosh Mountain the Indus enters a terrific series of gorges, and it is on the cliffs of these that the markhor are to be found early in the year. The first of the Haramosh nullahs, the Bul Loomba, (not to be confused with the Bur Loomba, which is the next below) is almost entirely composed of appalling precipices ; so bad that, though I have twice inspected them with great care, I came to the conclusion

that, while possible for the climbing expert, the nullah was not feasible for sport. Curiously enough the Bur Loomba on the immediate west is fairly easy and is a favourite resort of the Kashmiri shikaris, who do not love really bad ground.

Right above the Bul Loomba I once saw, at the beginning of September, a wonderful herd of about forty ibex and markhor bucks, every one of which was shootable and many of them first-class heads. I believe they gather there every year and would be approachable by making a camp about four miles east of the Bul Loomba, where there is a hut and a patch of cultivation, and then taking a bivouac high up and to the east of the head of that nullah; they are certainly worth almost any effort, however great. I watched them with a telescope from across the Indus for a couple of hours, and would certainly have had a try myself, but that my time was too short to allow of marching up to the bridge at Rondu and then down the right bank, as it would have taken eight days.

In the latter half of the year the right-bank nullahs are quite likely for a good head, but the left bank is thickly clothed with vegetation high up, and the markhor retire into places where it is most difficult to find them. Looking down a cliff face at imminent peril to one's neck for half an hour at a stretch, with only an occasional glimpse of a horn-point or patch of rough hair moving in the foliage three or four hundred feet below to indicate the presence of the quarry, is an experience which tries one's patience beyond endurance. It usually ends in an attempt to attain a better view from some other coign of vantage, the dislodging of a shower of stones or other debris on to the herd below, and their complete disappearance into even thicker bush than that where they have been browsing. In the monsoon months rain and mist often make things still more difficult and even the delights of beautiful flowers, wild strawberries and raspberries in plenty, and grand scenery, fail to compensate for dearth of sport.

In the spring the weather is almost consistently good,

the markhor are feeding on the new grass in open country, and there are not those exhausting preparatory climbs to be made before the day's work is hardly begun.

Gilgit is almost entirely a close preserve of the garrison there, and few outside that small and select body have had the opportunity of a shoot in that excellent district; but Astor, which is administered from Gilgit, is open to a limited number of guns (at present six) in each period of the summer shooting season, and there are still some fine heads to be got.

The nullahs on the Astor River rarely produce a good head nowadays, but it is well worth while doing the few extra marches beyond Bunji and trying Jutyah, Khaltar, or the Haramosh Nullah. If time is an object, Dushkin and Sheltor are the best of the nearer Astor nullahs, while Abadibur, the nearest of all, occasionally holds a good head in spring, but has no markhor at all after June; Ditchil is good for ibex and red bear.

There are three nullahs in Chilas open to special permit, and these also are well worth trying, for they also hold ibex, shapu and red bear. All the Baltistan markhor nullahs hold ibex, but red bear are not found in them, and are uncommon in Astor and Gilgit.

In all these areas the habits of markhor are similar, and the horn growth and size of body much the same. The adult bucks average about 42 inches at the shoulder and a good head is 50 inches, though some of the wider and thicker heads of less length are very fine also. They come down to 4,000 feet in winter and go up to 12,000 feet in summer, grazing in the spring and early summer, but mostly living by browsing during the rest of the year.

In Chitral comes the beginning of the change in shape of horn, which becomes more accentuated the farther west we go, where the lower hills which they inhabit, with the absence of snow, decrease of rainfall and consequently of herbage, cause local reduction in size of body and even some change of coat and colour.

The markhor of the Kashmir hills have plenty of good feed and, as is to be expected, the largest animals, running to 44 inches at the shoulder and 240 lb. in weight, are to be found there. In Chitral both bodily size and length of horn decreases, so that a 50-inch head is a great rarity there, while the type of horn is generally much closer in spiral formation; and this characteristic is more marked the farther south and west that they are found, so that the horns from Baluchistan and the Isa Khel Hills are like grooved rods; then those of the upper Kurram Valley are of the barley-sugar type, the spiral gradually increasing in depth to the north and east. These heads from the lower and more arid hills of the North-West Frontier have been termed "Straight-horned Markhor" and they are measured straight from base to tip, whereas the Kashmir heads are measured along the curve of the rib which runs along the spiral, starting from the back of the base. It is hard to define the border line, for heads from Chitral, and even from Baluchistan, are sometimes of the "Pir Panjal" type, while there is great variation in Afghanistan heads.

Naturally the scantier feed and, very often, scarcity of water, induce a smaller type of animal in these western hills; but the glaring sandstone cliffs which the markhor normally inhabit are responsible for a lighter shade of coat, so that the old dark-grey buck of Astor is a very light grey on the Takht-i-Suliman, and the light-brown of the female or immature male of the Kaj-i-Nag becomes sandy in the Isa Khel Hills or Sheikh Budin. Nor has the western animal the dense coat of the one from Kashmir, being deficient in underfur ("pashm"), and the sweeping masses of long hair, which reach almost to the ground in an old buck from the colder climates, are much reduced in those from the lower and warmer hills. It is noticeable, however, that bucks from the Takht-i-Suliman of Baluchistan, which massif is over 11,000 feet in height and is well-wooded, are bigger and heavier in coat than those from Sheikh Budin and the Isa Khel Hills, which live at under 6,000 feet.

As for the sport provided by an old markhor buck, wherever he may live and whatever type of horn he possess, it is grand ; while I think, perhaps, that the Isa Khel beast is the most difficult animal of them all to bring to book. I have stalked markhor wherever they live, except in Afghanistan, and the Isa Khel Hills, which hold the smallest race, have provided the worst problem to tackle of all the lot. It is thirty years since I first went there, and two subsequent visits have only increased my respect for their difficulties. These hills are composed of sandstone precipices interspersed with little ledges and slopes of detritus, on which grow scanty bushes and rough speargrass, on both of which the markhor feed.

They have not the awe-inspiring effect of, say, the great cliff above the Indus at the mouth of Mushkin Nullah in Astor, where one looks down 5,000 feet to the clay-coloured rushing river ; but the sandstone is rotten and breaks away under foot, it overhangs at the top of the range like the crest of a breaking wave and rains boulders at times, the speargrass is an unending torment and, above all, there is no rest for eye or body. In the higher hills where the markhor live there is always a pine tree to shelter one, some grassy slope on which to laze and wonder at the glory of the snow peaks, and one need not always be looking down some horrid drop or up at some threatening overhang. In the lower hills there is hardly ever shade ; there is little or no water and what there is is alum-impregnated and roughens the throat and already parched lips ; while the ground is so bad that it took four men over an hour to get my last markhor to a place where it was possible to photograph it, and even then it had to be held up with a khud-stick and I could not get far enough away to include the whole animal.

Although the markhor of Kashmir has some sort of protection, his unfortunate relation of the Frontier hills is persecuted by all and sundry at all times of the year, while the local inhabitants are well-armed, and the peace which has lately invested that country has only given the tribesmen

more leisure to hunt. Small wonder that the markhor have decreased almost to vanishing point and are likely to decrease still further unless measures are adopted for their protection. Such measures are difficult to enforce in country where my last four trips have had to be carried out with an escort of forty rifles, but at least the authorities might make some effort in places immediately under their control, instead of encouraging the local soldiery to shoot markhor and oorial for meat in lieu of meat rations, using government ammunition to do it.

Recent reports from Baluchistan are more encouraging, and the preserves established near Ziarat will save markhor for many a day and give many a sportsman the thrill of climbing on the cliffs of Khilafat ; but in the North-West Frontier Province the case of the markhor seems almost hopeless.

I think this grand wild goat must be the focal point of more wonderful memories for more sportsmen than any other beast in the world : can nothing be done to better his condition ?

Let those who have hunted him think of a herd rushing down some great Himalayan slope to their evening feed, stones leaping and whizzing in the cloud of dust which accompanies them ; then the halt, the stare round and the eager dropping of heads to the sweet new grass, while every now and then one of the big bucks feeding at the top of the herd would lift his widespread spiral horns and mount a boulder ; then, not satisfied with the protection given by the wary ewes, gaze around at every suspicious place and object, his long hair waving in the wind, until, finally satisfied, he leaves his boulder and returns to his grazing. Then the stalk could proceed once more, and the stalker crawl painfully on ; traversing some horrid little cliff on which every projecting stone seemed bent on thrusting him into the void below, or scrambling across loose scree, until at last the vantage point was reached and rifle or camera got ready. It might result in a 50-inch head or in a fine picture, the first more probable than the

second ; or it might result in nothing but the wild rush of a fleeing herd ; but there was always another day.

If nothing be done there will be no more such days, and surely it is worth while trying to pay for such memories with an effort to provide such days for others.

An indifferent photograph of markhor on a cliff in the Kaj-i-Nag took nineteen days' stalking of that particular buck to secure, and that was the only good buck seen. The others had all been poached, and in a nullah where there were a hundred markhor a few years ago there were a bare twenty of both sexes.

HIMALAYAN IBEX.—For many of us who have served in India the interest and thrill of our first entry into the regimental mess was much enhanced by the study of the trophies hanging on the wall, and in a mess in Northern India some of these trophies are almost certain to be the back-curving ridged horns of the Himalayan Ibex ; probably one of the few which the novice will recognize at first.

There is something about their appearance and the mere name of the fine wild goat which bears them which, to a right-minded subaltern, inevitably suggests a desire to get a pair or two to his own credit ; and no similar desire can be more commendable in the conception or the carrying out. For the Himalayan Ibex, being one of the hardiest animals which ever scraped a winter sustenance from snow-covered twigs, does not mind hard weather and stays up high when all other game in the vicinity, except perhaps the bharal, have descended to a level where food is more easily found and, consequently, the poacher has greater opportunity. As a result of their hardiness ibex still flourish in most parts of the Himalayas to the same extent that they did twenty years ago, in fact I can definitely assert that they are more plentiful than they were in some localities.

As the ground on which they live rarely approaches in difficulty that favoured by markhor and tahr, their pursuit normally entailing only stiff uphill plugging and very

little climbing, they are most suitable beasts for the novice to select for his stalking initiation, while they are even to be found within three days' journey of railhead, though they are not plentiful under a week's hard marching.

With their comparative freedom from poachers they have not abated one jot of their wariness, and any carelessness or cavalier treatment of the stalk will inevitably result in the disappearance of the desired bucks for several days, or even their final departure into the next nullah.

That they are to be found on difficult ground is definitely shown by the fact that once, in Kishtwar, a week's watching of a herd with a good head in it terminated in a three hours' climb, at the end of which my fingers were so cramped that I had to sit on them to straighten them out ; and the shot resulted in my beast pitching over the face of the cliff and ending up in mush 1,200 feet below, with his horns in flinders. On another occasion in Baltistan, having left my tiffin-coolie down below, I nearly ended his career by dropping my quarry on to the rocks within a yard of him from 500 feet above : 200 lb. of dead ibex would have effectually concluded all his hopes of promotion to the rank of shikari.

At first, and when seen in the winter or early spring, the Himalayan ibex appears to be a bulky and rather clumsy animal. Although the old buck, having a heavy pair of horns to carry and a constitution to maintain against times when food is scarce and the thermometer many degrees below zero, is by no means the gazelle-like animal which many of our museums would have us believe ; yet much of his bulky appearance is due to the dense winter coat, which is rather in the nature of a springy hair mattress and a wonderful resister of cold. When the green grass appears, and he gluts himself thereon, his coat begins to come off in untidy patches, and gives him rather a ragbag appearance, until it is completely shed and he is clad in smooth brown hair again. This summer coat is almost always darker than the thick winter one, and, like that of the snow bear,

will develop almost completely white points in some individuals. Such coloration is by no means constant in any particular locality, though it is commoner round the Deosai Plateau than anywhere else I know, and is also a characteristic of most of the snow bears of that area ; but some herds will contain individuals of several shades of light brown, dark brown, cream colour, or all three ; while some even appear skewbald, owing to the light *pushm*, or underfleece, pushing through the coarser outer coat.

It is equally fruitless to try and determine the local race or habitat of the Himalayan Ibex by the form of its horns ; for the closeness and number of the ridges, their projection above the surface, or the general shape and bend of the horns is variable in every district ; and, while those in one nullah will appear to be constantly different in shape to those in another nullah in another district, yet two nullahs in those two districts may be found to hold bucks whose horns cannot be differentiated in any way. I thought, when I first went to Kishtwar, that ibex from that district could be invariably distinguished from those of Baltistan and Ladakh by the closeness and shallowness of the ridges on the front curve. Later on, having had further experience of both areas, I shot ibex in Baltistan whose horns were exactly like those I had shot in Kishtwar, and vice versa.

The shape and form of the horns is far more a herd characteristic than due to locality ; and is usually, as with deer, the result of the dominating influence of some old male, who has impressed his type on his descendants to several generations.

The girth and length of horn is, of course, affected not only by abundance of feed, but also by the soil on which the animal lives, and this is nowhere more clearly marked than in the ibex and bharal of the area in the angle between the Zaskar River and the Indus, where the heads of neither animal attain the size of the trophies borne by males in

immediately adjoining districts, although both species are common.

For purposes of sport the western limit of the ibex may be said to be the Chitral Valley, though a few are to be found as far west as the Sufed Koh. On the south they extend to the right bank of the Sutlej, but are scarce and carry poor heads anywhere in Lahoul and Spiti, though an occasional 40-inch head turns up in those districts, and even in Kulu. Baltistan is still the great country for good heads, and heads of 45 inches to 50 inches are still shot every year; while the nullahs up the Shyok, which are rarely explored by the sportsman, hold plenty of good heads, as do some of those on the right bank of the Indus above Leh. Only in the Valley of Kashmir, where they have been "strictly preserved" for many years, are they almost exterminated; for the Gujar poacher has been too much for them and a sadder example of the futility of attempting to preserve without proper keeping it would be hard to find. There are still a few ibex along the range which bounds the Kashmir Valley on the south, from a little west of the Banihal Pass, then in the vicinity of the Brahma Peaks, and again at the head of the Nowboog Valley. In the Sind Valley the once flourishing herd at the head of the Rewil nullah, which held its own up to a few years ago, is now almost exterminated, and a like fate has overtaken those of the Pulwar Nullah, above Bandipur. A limited number of licences issued permitting the shooting of one head in the Jhelum catchment area, would have ensured some supervision of the herds and would not have affected breeding animals.

In Kishtwar and the Wardwan there is much ibex ground almost untouched, and the Wardwan Valley would certainly repay a visit, as it has long ceased to be fashionable amongst Kashmiri shikaris and holds both species of bear, with tahr and gaural at its lower end. Such nullahs as the Kraish, Kibber and Nath Nai's have a tremendous area of shooting ground and used to hold many fine ibex,

which were shot down at the end of last century. Then the exploitation of Baltistan turned the flood-tide of sportsmen and the Wardwan became almost deserted, so that, the Gujar poacher being almost a negligible factor, the stock of ibex has increased its strength and an average of 42 inches for three heads is far from unobtainable.

Suru, again, is a much neglected district, and holds plenty of good heads.

It is possible to stalk ibex at any season of the year, but May and June are incomparably the best months for the sport. There is always one bad pass to cross, but with that behind one there is nothing to compare with the pleasure of the steady approach to one's ground along valleys which show an ever-changing vista of great gorges, roaring torrents and glittering snow-capped peaks. The squalor of the villages even is concealed by the pink and white foam of masses of apricot blossom and the delicate green of poplar and willow is a constant pleasure to the eye.

Arrived at one's nullah it is possible, even probable, that ibex will be seen the very first evening and I shall never forget my first sight of a herd. I had taken the telescope and lay on a knoll outside the squalid Balti village scanning the cliffs above. Impatient and without method, I might have gone on for hours without result, but by some glorious chance a forest of curved horns suddenly appeared in the field of the glass : thirty bucks lying together on a big ledge. My eyes were weary with watching them before darkness forced me to give up and go back to my tent.

Ibex have not as fine an appearance as markhor and are more deliberate in their movements, but they are quite sufficiently difficult to get up to, and, though the ground is easier than markhor ground, it is more open and the ewes, in particular, seem more constantly wary than female markhor.

But the characteristic which is most often fatal to good ibex bucks is their constancy and punctuality in coming to

feed on some particular slope, and the use they make of the same route up the mountain-side on their way back to their resting-place. Markhor are not nearly so consistent and change their feeding ground frequently, and often for no apparent reason, while they may be seen browsing, especially during rainy weather, at any time of the day. Once a party of ibex have lain down for the day they are pretty certain to stay there until mid-afternoon, unless frightened in some way, such as by the appearance of their chief enemy, a snow leopard. In the spring they will usually feed down in the evening, lie up on some rocky spur during the night, feed again in the same place in the morning and, about half-past nine, will begin to make their way up to the midday resting-place. In the late summer and autumn, when they live high up near the permanent snow, they will usually return to a cliff high above their feeding ground both at morning and evening.

They are given to local migration, shifting ground from one nullah to another at a considerable distance, and crossing very lofty ridges in the course of their travels; so that their summer feeding grounds may be as much as 40 miles distant from their spring and winter haunts. Such migrations are considerably influenced, of course, by the appearance of shepherds and their flocks, for ibex will not tolerate their near vicinity; but in one big nullah in Chamba-Lahoul I once saw, in the month of August, a herd of ibex containing several sizeable bucks actually living on a cliff with buffaloes, of all animals, feeding on the slopes above them.

My last stalks after ibex were in June 1934, in the country south of the Deosai, and are worth recounting as being typical of such efforts at that time of year.

We camped about halfway up the Nagai Nullah in the second week of June, and the very first day spotted a number of ibex feeding on both sides of a big spur on the north side of the valley. The individuals and their habits were most typical of Himalayan ibex and may be given in detail. High

up the spur, on the edge of the snow, were two fine bucks, with horns of about 44 inches and 42 inches respectively, attended by one with a 35-inch head which always fed above the other two and acted as general fag and sentry. This smaller buck was treated with considerable rudeness, being driven away roughly by the larger ones by short charges, and it is difficult to see what he gained by his devoted service, it being most noticeable then, and on subsequent occasions, that he very rarely fed while his seniors were glutting themselves on the new grass springing up in the sunlit gullies watered by trickles from the melting snow.

Five hundred feet below these there were eight ewes and four small bucks grazing, and higher up the side nullah overlooked by the east face of the big spur, were five young males whose chosen bit of ground was a series of broken cliffs at the bottom of which they found their grass.

Thus both sides of the spur were commanded and a close approach seemed hardly feasible from either flank, so a further reconnaissance was necessary. This we carried out the next evening from the opposite side of the mouth of the side nullah, and ensconced ourselves amongst some pines at about three o'clock to wait for the appearance of the ibex for their feed. About four o'clock the ewes appeared, feeding midway up the big open slope on the east face of the spur, and half an hour later the five small bucks emerged at the foot of the crags 500 yards farther up the nullah and on the same level. Another hour passed before I spotted the big bucks and their fag; they were feeding in a little dip amongst the lower patches of snow and nearly a thousand feet above the ewes. There was nothing for it but a very early start next morning to try to get above them just as the sun should cause the wind to change its direction upwards.

Sunrise next morning found us traversing a slope of snow towards a ragged fringe of rocks, which there formed the crest of the big spur and was just above the feeding place of the three bucks. We gained its shelter and paused for

five minutes rest, then clambered over the top in the face of a bitter wind. Both the dip immediately beyond, and the next one, were empty of life. We crawled out on the crags and examined the ground below, the while the wind tried to bite pieces out of us and two ram chikor whistled mournfully from the snows above us. No result.

The shikaris did a traverse to the next ridge northward and I climbed out on to another minor spur: the shikaris saw the party of ewes, feeding a mile higher up the nullah than the previous evening and in much worse ground, and I saw nothing. A couple of red bears appeared on the narrow crest of a little ridge across the side nullah and stretched themselves along its top to sun-bathe, two legs on either side, like washing hung up to dry, while a little grey mouse-hare ran out among the rocks within a yard of me and nibbled shoots of grass from a crevice.

I saw some tracks across a patch of snow a hundred yards below us and went down to investigate. The mystery was solved; for that inveterate enemy of ibex and the ibex hunter, a snow leopard, had been there the previous evening, and must have passed in the dusk just after we had started back for camp. The marvel was that there were any ibex at all still in the vicinity, for there is no enemy of their's which is so much feared.

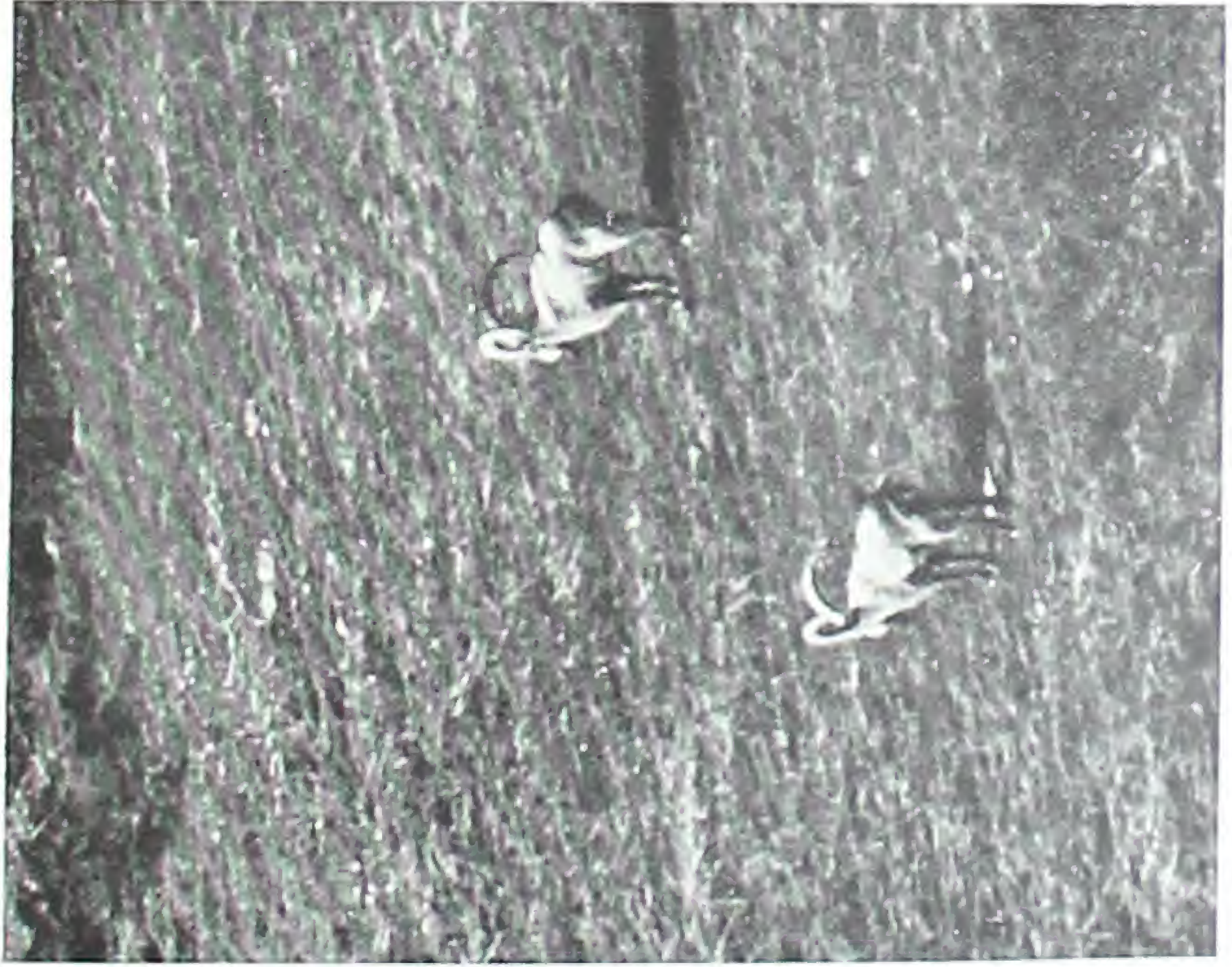
Now the problem was to find those two big bucks again, and the probability seemed that they were somewhere higher up that side nullah, whose lofty crest margined the south flank of the Deosai Plateau; though they might have gone right over and be lost to us for good.

Giving them time for recovery from their fright, for they would probably stay high up on the cliffs for at least a full day, we did not make our next attempt until the next afternoon, when we crossed the foaming stream of the side nullah by a fir tree, which we cut down and threw across; then made our way up its left bank to a knoll of pines from which we could see right up to the head and, in particular, the slopes

below the black, snow-patched precipices on the same side as ourselves. Immediately we spotted two small whitish blots with a darker one a little above them, and the telescope soon showed them to be the big bucks and their fag. They were feeding greedily, though the small buck maintained a steady watch from above and, even as we looked, lay down a furlong higher up on a barren shaly slope. Prompt action was necessary, for they might be gone over the main crest any day now, and the Gujars were pressing up from below with their flocks, so I set off immediately along the foot of the cliff above the stream. Hardly a climb, the traverse was an unpleasant forced scramble, and, while the big fellows presented no danger at the moment, care had to be taken to negotiate the corners well under cover from the small buck. Once I slipped into three feet of icy water, and again my foot went deep into a patch of old snow and the shikaris had to haul me out, but at last we reached a fairly open patch of stony debris in a bend of the hill-side and ran up it well out of sight for half a mile to reach the next corner and a first view of our quarry.

They were a quarter of a mile away and, thank heaven, moving eastward, so that a projecting shoulder would hide them for a while. A short while only, I was certain, for there was little feed in that direction. Still it proved long enough, and we got round that corner and into the next bight, then gained another furlong. The bucks showed again, moving west this time and we shrank down into a trough in the snowfield which here filled the bottom of the nullah. Still 200 yards away, and I must make another 80 at least to get within range of the rocky corner which they were sure to cross. Half-past five and the sun would soon be gone, although their slope faced west.

A big rock projected into our snowfield and I spied a hole between it and the frozen face of the nevé, crawled through (how cold it was!) and into a trough which ran the length of the snowfield, watched until the heads of all three



TWO GOOD HIMALAYAN IBEX BUCKS ON THE FEEDING SLOPES BELOW THE CLIFFS

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bucks were down and slid quickly over the ridge into the next trough ; then crawled up it to a bend where some small lumps had been forced up and gave a semblance of cover, and a photograph was now possible. Sliding the heavy camera into position and racking it out, I focused approximately then finished the job rapidly when their heads were down again, waited again then sat up with everything ready. I got two pictures as they fed, they then raised their heads and stood suspicious and I took two more. They began to move up the juniper-patched slope as the small buck saw me and uttered a hissing snort, but stopped again and I got two more. I slid back into the trough and warmed my frozen left hand in my pocket, for I had had to place it under the camera for every exposure, to keep it steady ; then peeped over the top again, to see the three bucks climbing steadily, jumping from rock to rock of the cliffs above and every now and again stopping to look back. I waited for them to get well away, then rejoined the shikaris, and made for home, full of hope ; with what justification the opposite page will show. Next morning, as we made our way higher up the main nullah, we stopped at the mouth of the small one and watched those three bucks cross over the main ridge to the Deosai, and thanked our stars that we had been in time to at least get something in the way of a picture.

Our next lot of ibex were four good bucks, one about 45 inches, which we found high up the south branch of the main nullah head. With difficulty I took a bivouac up and settled down for the night round a corner and a mile below their home. As darkness came a Gujar arrived from up the nullah. He settled down to talk and spend the night, saying that he was on his way from Tilel to visit friends lower down this same valley, and had crossed that afternoon by a very difficult track at the head of the nullah in which my ibex lived, achieving the feat much earlier in the year than was considered possible as a rule.

Was I shooting ? Because if I was I ought to have

good sport. Only an hour ago he had passed four enormous ibex feeding above him, and they were so tame that he had had to shout at them for some time before they would run away.

Why are such fools allowed to cumber this earth !

That was my last attempt to stalk ibex, for no trace could again be found of those four bucks and only a few ewes rewarded further search.

It must not be thought that ibex are necessarily found only in small herds, for in Baltistan they are to be seen up to 150 in number ; I have personally seen 120 on a slope not 300 yards square. These big herds break up as the snow goes higher, and it is rare to see more than thirty ibex together in the autumn, though in August 1933, in a nullah above Leh, twenty fine bucks appeared on a patch of green high above our camp.

If anyone is looking for new ground for ibex, let him try the Shyok Valley : it is little touched, especially the portion in Ladakh and below the junction of the Nubra River, where I have seen some grand heads.

Wherever they are found they are worth many stalks, for the very bad ground usually associated with markhor and tahr, and which to many is too nerve-racking to permit of enjoyment in the stalk, is normally not met with on ibex ground ; while old bucks are, except for difficulties of climbing, just as difficult to get up to as either of the long-haired wild goats—perhaps even more difficult, for ibex ground is more open and provides less cover.

No novice can do better than make his first long trip after ibex, for he is almost certain at least to get a chance at good heads, and there is not that succession of blank days so discouraging to a beginner, or the climbing difficulties which may make him decide finally that a Himalayan shooting trip is not worth while.

MUSK DEER.—Of all the quaint “ extras ” to be encountered on shooting trips in various parts of the world, the Musk

Deer is perhaps the quaintest. Its coat, of dense pithy hair, only finds a resemblance in that of the Klipspringer of Africa, while the elongated false hooves, hollowed on their undersides, which spread out to prevent sinking in snow, have no counterpart in any other animal. Then the absence of horns, the great development of the canine teeth and the unfortunate (for the deer) presence of the musk pod, all render this little beast of the greatest interest to the naturalist.

I can also strongly recommend them to the sportsman as interesting animals whose habits are yet by no means fully known, for, of recent years, although I had frequently met with them and watched them, I discovered several interesting things about them which were quite new to me, nor can I find them recorded in any book.

Up to 1934 I had never seen a musk deer away from forest, or at least dense scrub, but in that year I found them frequently, at the head of the Kishenganga Valley, on open slopes merely patched with juniper, where they invariably kept to the shade. I have never yet seen a musk deer in open sunlight, and was much struck by their use of cover and avoidance of any background which would show them up.

Their coloration also, in this particular district, was different to what I have seen elsewhere, and was notable for the fact that they were much lighter above than below, being light brown above and dark brown below. This is quite contrary to nature's usual rule, while all I have seen previously were mainly of some shade of grey, with brown or golden speckling. The one feature which seemed always constant in colour everywhere was the head, which is grey and blends into the background of grey rocks and shadows affected by these little animals in the most marvellous manner. On one occasion I found myself looking at what appeared to be a headless animal standing in a hollow on the face of a cliff below some straggling juniper roots, and it took me some time to realize, although I was using powerful glasses at under a hundred yards' range, that it was a musk deer. I

got within about forty yards of the little beast, which, as is usual with the species, showed rather foolish confidence in its invisibility, and took two photographs, one as it stood sideways on, and the other as it looked back for a moment before crossing the crest of the ridge. The first photograph shows the coloration and shape of the body, and the inordinately long hind legs, quite clearly, but the head is almost invisible against the grey shale of the background. The other picture shows the curious bat-like ears and the head quite clearly, having caught it for a moment with a dark-green juniper bush for a background.

These same long legs look as if the musk deer were condemned to travel eternally uphill, but it is extremely fast downhill, the hind legs propelling it like catapults and controlling extraordinary twists in taking off, which give it the appearance of jumping round corners.

Another habit I discovered in this same area, was that they come down regularly into the valleys, I think at night, deserting their cliffs for the dangers of the flat. Why they do this is most obscure, for it is not for water, and apparently not for food, and their quite unmistakable tracks, with the heavily split foot and marks of the false hooves behind, were on several occasions mingled with fresh ones of wolves, which did not, however, seem to have chased the musk deer.

It is a great pity that these little beasts are so terribly persecuted for the sake of their musk pod, which is still a great desideratum as a base in the compounding of native scents, for they are most harmless and interesting. How they, with their foolishly confiding ways, have managed to survive at all, is surprising, for they are still fairly common in parts of Kashmir; but I would strongly recommend their study as a side line for any sportsman naturalist, there being without doubt much which may yet be learnt about them.

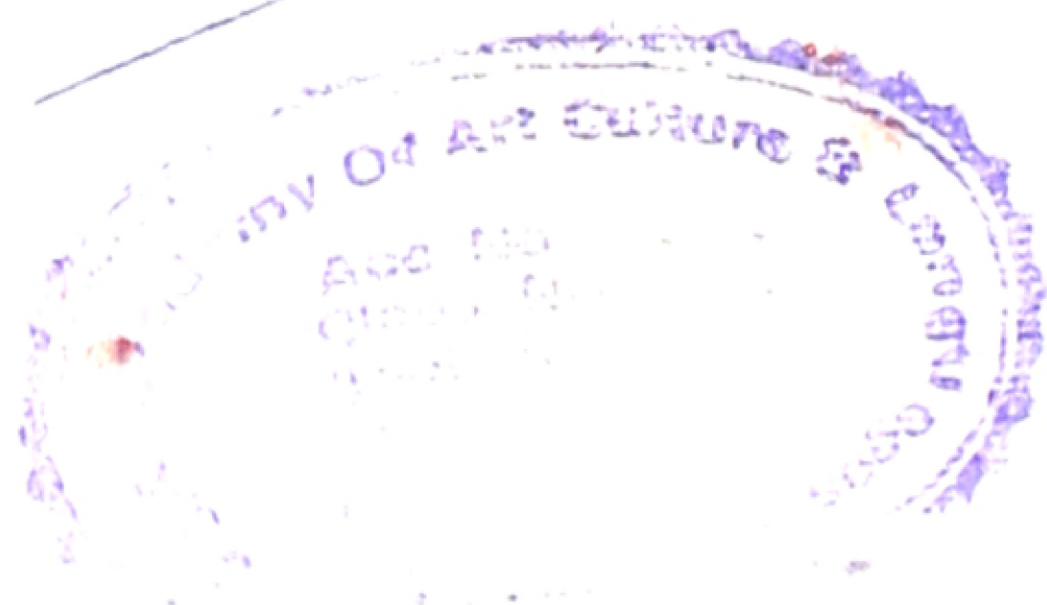
From the point of view of the stalker they lack interest, but if he go frequently to the Himalayas he is certain to



A MUSK DEER, KISHENGANGA VALLEY

Note the abnormally long hind legs, the rounded ears, and the brownish coloration, dark below and light above.

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come across them more than once, and a careful study through glasses will undoubtedly repay him.

It is hard even to cease writing about the higher hills and their game, so many pleasant memories come crowding. Even an old photograph of a camp brings back the scent of warm pines, the rattling cry of the nutcracker as it wings its dipping flight across the valley to ravish still another tree of its cones, or the shadow of a great lammergeier sweeping across the upland pastures. We who have acquired these memories, to enjoy in the twilight hours, can only encourage others to gather as good a store and, like us, they will be ever thankful that they went.

CHAPTER X

THE HIGH UPLANDS

BHARAL.

(*Ovis nahoar.*)

VERNACULAR.—*Napu*, Ladakh ; *Bharal*, Gahrwal.

DESCRIPTION.—Height $34\frac{1}{2}$ inches. A stockily-built sheep, the general colour blue-grey, darker on back, and light below, white on belly and inside of the legs. A black stripe down the front of the forelegs, and upper surface of tail black. The old rams have a black chest and throat.

HORNS.—Smooth, cylindrical in section, curving upward and outward, downward, back and inward. They run to 33 inches in length and 14 inches in girth, these measurements being still attainable. Several heads of 30 inches or over have been obtained in recent years ; notably in Southern Rupshu and on the hills north of the Tso Moriri. They have age rings denoting years of growth. The horns are not easy to judge and should be viewed from the side and front to estimate the amount of drop and backward curve.

DISTRIBUTION.—A few come into Hunza in the summer from the Pamirs, but their static westerly limit is the Shyok Valley about 40 miles below its junction with the Nubra. They are also found a few miles west of Lamayuru, and throughout Eastern Zaskar. From these limits they extend along the outer Himalayas on the higher slopes, and throughout Tibet to Western China.

SHAPU.

(*Ovis vignei vignei*.)

VERNACULAR.—*Sha* or *Shapu*, Ladakh and Baltistan ; *Oorin*, Astor.

DESCRIPTION.—A larger race of the Punjab oorial, 36 inches at the shoulder and with the beard and ruff not so highly developed. The horns of Ladakh specimens usually have the angles more rounded, and the wrinkles less pronounced and closer together. In size, development of beard and ruff, and shape of horn, the Astor animal is intermediate with that of the Punjab, but has more the habits of the Ladakh beast, in that it sticks to big open slopes. The general coloration is the same as in the oorial, but I have not seen the patch on the saddle in any specimen from Kashmir territory. A 30-inch head is still obtainable in Ladakh, where the horns run to 12 inches in girth, and also up the Shyok Valley, but near Skardu and in Astor 25 inches is hard to find.

OVIS AMMON or TIBETAN WILD SHEEP.

(*Ovis ammon hodgsoni*.)

VERNACULAR.—*Nyan*, Ladakhi.

DESCRIPTION.—Up to 47 inches at the shoulder. Colour greyish-brown in winter and reddish-grey in summer, darker on the back and lighter on the underparts. An old ram has a white ruff.

HORNS.—Good heads, up to 52½ inches are still obtainable, and ammon are much more plentiful than they were twenty years ago. They have suffered occasionally from foot-and-mouth disease, brought up by sheep from Lahoul, but have recovered ; so that heads over 40 inches are fairly easy to find, and the right bank of the Indus, for 50 miles below Tibetan territory, produces 45-inch heads every year, the vicinity of Chushol being particularly good. The Chang-chenmo nullahs are little shot and hold many ammon, especially the high ground between Kyam and the Mipal Loomba.

TIBETAN ANTELOPE.

*(Pantholops hodgsoni.)*VERNACULAR.—*Chiru*, Tibetan.

DESCRIPTION.—32 inches at shoulder, of rather slender build, but looking stout owing to the thick coat of interwoven pale brown hair. The lower and inner surfaces are white. The face and front of the legs are black. The muzzle is curiously swollen.

HORNS.—Curved slightly forward, transversely ridged on the front surface, and diverging to about 6 inches at the tips, a good head is a very handsome trophy. Few big bucks are to be seen in Changchenmo nowadays, and the record head of $27\frac{3}{4}$ inches is not likely to be beaten there; but plenty of good heads of 23 inches to 25 inches are to be had.

DISTRIBUTION.—Only in Changchenmo and the neighbouring Mipal Loomba in North India, except for occasional females and small males on the Lingti Tsiang plains.

TIBETAN GAZELLE.

*(Gazella picticaudata.)*VERNACULAR.—*Goa*, Tibetan.

DESCRIPTION.—A slender gazelle of light, sandy-grey body colour, with a white disc on the buttocks and white underparts. A black tip to the tail is the only dark marking. Height at shoulder 24 inches.

HORNS.—Of normal gazelle type, but with the curve at the top so pronounced as to make almost a right angle with the body of the horn. They are closely ringed and the record head is $15\frac{1}{2}$ inches.

YAK.

*(Poephagus grunniens.)*VERNACULAR.—*Dong*, Tibetan.

DESCRIPTION.—A heavy, long-bodied black ox, with sweeping masses of hair reaching to the ground in many

cases. The bull stands about 15 hands, the cow a hand lower.

HORNS.—As yak may not be shot in Kashmir territory and there are very few places in the Eastern Himalayas where they come across in the summer, recent records are hard to come by. Those in Changchenmo are migrants from the big herds of Tibet, and the record head of 40-inches in length might be equalled there. There is every reason to believe that they are increasing in Tibet and Changchenmo, though the recent cattle plague, which has affected the tame yaks very severely north of the Indus (careful segregation by Ladakhi owners has prevented it crossing to the south bank, where tame yaks are too plentiful) may have reduced their numbers.

TIBETAN WILD ASS.

(*Equus kiang*.)

VERNACULAR.—*Kiang*, Tibetan.

DESCRIPTION.—About 13 hands in height, reddish, sandy body colour with lighter underparts. A large, ugly fiddle-head, long, coarse, dark mane and tail, dark face and white muzzle.

DISTRIBUTION.—The Tibetan plateau above 12,000 feet. Plentiful in Rupshu and Changchenmo.

APPROACHING Leh by the Treaty Road from Srinagar in July, the first game animals to be seen will most probably be a few shapu on either side of the Fotu La between Hemiskot and Lamayuru.

On the way to Leh by the Punjab road from the Kulu Valley the first game animals, other than a possible ibex or two in the Chandra Bhaga Valley, will be a small herd of bharal on the hills south of the Lingti River, opposite Rachogba, where one halts before commencing the long climb to the Lachalang La.

Both species will be at about 15,000 feet, the shapu at

the highest altitude to which they go, and the bharal at the lowest they come to in summer time, and, while the shapu come down to the Indus banks at 10,000 feet to 11,000 feet in winter, gathering on the open plains near Leh, the bharal do not quit the foothills and unless driven down by heavy snow, stick to the higher slopes.

In the same side-valleys of the Indus, up to some 35 miles above Leh, ibex are also found, and I have seen all three species on one hillside close to the Choki La Pass, east of Lamayuru and leading to the valley of the Zaskar River.

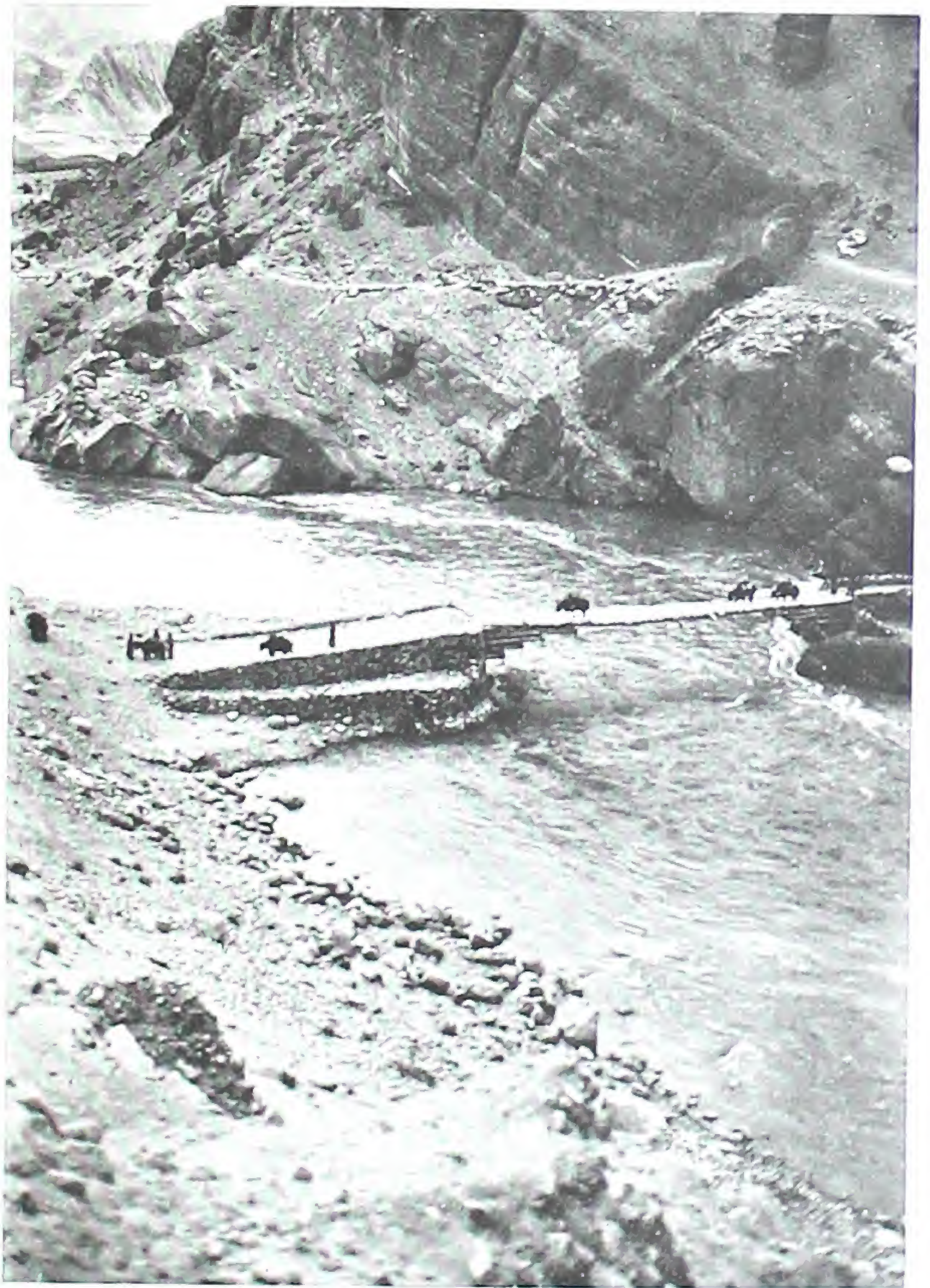
This portion of the Indus Valley and the parallel portion of the Shyok Valley on the north, are the sole meeting places of the bharal and shapu ; for the latter extend thence westward, down the Shyok and Indus Valleys, past Gilgit where they are called *oorin*, to the Punjab where, as a smaller ruffed and bearded race they are called *oorial*, and have already been dealt with in another chapter.

Bharal extend southward and eastward, through Zaskar, Rupshu and Changchenmo, along the Himalayas to Sikkim, and through Tibet half-way across China. There is also much good ground for them in the Upper Shyok Valley from thirty miles of its junction with the Nubra, up to Nubra itself, and round the Kundun glaciers.

But let us take the shapu first, before climbing higher to the bharal.

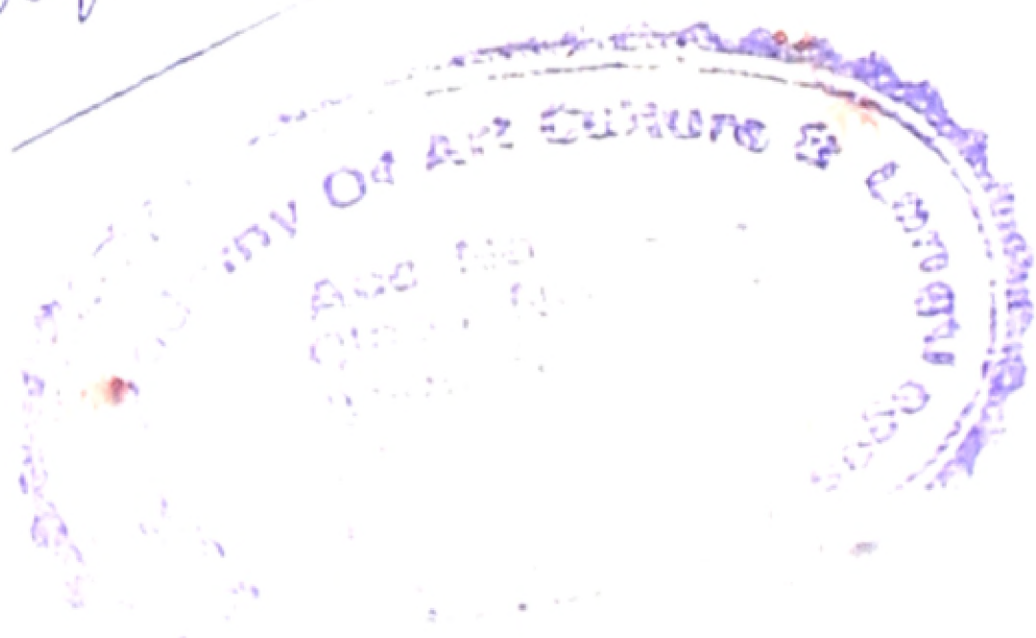
Big open slopes are what they love, and snow is what they hate, and while from late September to May they are low down and fairly easy to stalk, in summer, when the European sportsman usually penetrates to their country, it is most difficult to get up to an old ram. In addition to their habit of lying down on big barren hillside, devoid of cover, they have a most trying trick of suddenly changing ground when apparently settled for the day.

It is most regrettable that this fine sheep, whose 36 inches at the shoulder, gamey appearance, and wariness, make it a most



THE BRIDGE AT UGU, 30 MILES ABOVE LEH
The bridge farthest up the Indus

Cultural Academy



desirable sporting asset to Kashmir, should have been so shot down by poachers in winter.

In Astor its numbers are steadily being reduced, and are one half what they were ten years ago ; near Skardu it has been almost exterminated, and not a quarter of the number of even five years ago remain in the Indus Valley in Ladakh. Poaching parties even make trips from the villages round Khalatse to shoot shapu round Wanla and Hinju.

Only in scattered localities in the Shyok Valley, and near the junction of the Zaskar River with the Indus, does it survive in fair numbers. Shapu would appear to be doomed in Kashmir territory, as the game laws are a dead letter in Ladakh and Baltistan as far as this species is concerned.

Bharal still flourish in Ladakh and Zaskar though the latter country seems to hold nothing but small heads with 23 inches about the maximum, which is also about the limit in Lahoul, Kulu and Gahrwal. On the northern and eastern flanks of the Zaskar Range, they grow much bigger, and in South-East Rupshu several heads of 30 inches or over have been shot in recent years.

A grand sporting animal the bharal, handsome, wary and providing a fine and distinctive trophy. Their pursuit is as arduous and difficult as any stalker can wish. Their favourite country is one containing much blue shale, and they are extremely hard to distinguish in such surroundings, the grey-blue coat blending with the rocks, and the deep black of the ram's chest, merely accentuating the resemblance to the shadowed side of a rock. I once got up to within easy range of a large herd lying amongst big scree to the south-west of the Polakonka Pass, and, after carefully examining the eighteen rams which I could see, shot the best. To my disgust some forty rams jumped up, including half a dozen carrying better heads than the one that I had shot.

Usually the biggest rams are in small parties of five or six, and live right up on the snow-line, which may be 19,000 feet or more in late summer ; so stalking them is a tough

job, necessitating good lungs and immunity from mountain sickness.

The best herd I have seen, was in the Kayma Nullah, south-east of Gya, in August, 1933. There were twenty-six of them, exactly half being rams, and four of these carried heads of at least 28 inches, two of them I estimated as being over 30 inches. They had been frightened by both snow leopard and wolf on the two days previous to that on which I stalked them, and, having finished their morning feed, settled down on and around a knoll at the end of a spur projecting from a great round-topped mountain east of the Tagalang Pass.

On the neck joining the spur to the main mass was a tumbled heap of rocks, 50 to 60 yards from the hillock, and if I could reach that undetected there was every chance of a good photograph. But there was a deep nullah between us and any attempt to cross the forward slope on our side would have been fatal, so we had a long pull up through the snow, reached the head of it, where I had some food, caught an extremely rare *Parnassius* butterfly, and then, after seeing that the herd was still resting peacefully, started to circle the round-topped mountain. An hour's trudging on gravelly slopes and we emerged on the north face where a rock outcrop gave us a spying point, the herd's knoll being just visible over a big bulge with a solitary ewe doing sentry on the top. Down-hill and a crawl along the bulge, and the ewe came into view again ; no good. Back again, down a little gully, a 300-yards traverse of a steep snow-filled corrie and we reached the butt of the spur. Carefully up to a dip in the neck, and my heap of rocks was only fifty yards away, and I was well under cover.

I took out the camera, extended it and focused the 30-inch lens at about 50 yards, then, leaving the shikari and Ladakhi villager, had a quiet and easy approach to my point of vantage. Placing the camera in position, I raised my head gently. The knoll was empty. I rose still farther, a movement caught my eye, and there on the slope below me to my right was the herd, half a dozen of the finest rams staring at me not 20 yards

away ; they had finished their rest, and begun to feed back towards the morning's ground. The tops of the rocks between us were level with my chest and the position almost hopeless, as I could not use my reflex finder or steady the camera ; though if I had been shooting I could easily have bagged the two finest rams. Running out the lens to approximately the right focus, I took a despairing snap, aligning the camera by looking along the top, just before the herd bolted. But a big extension and no rest is a hopeless proposition, and, after a weary plod back to camp 4,000 feet below, the developed negative showed the heads of two grand rams as if seen in a distorting mirror, against a weirdly streaky background ; camera movement at its worst.

Ten days later in a nullah on the right bank of the Indus after nearly despairing of ever getting a photograph, a herd I had lost for four days appeared suddenly in a ravine near camp about 4 p.m., and a rush stalk, with the setting sun behind me and a doubtful wind, got me within a hundred yards, with four photographs resulting.

Bharal are locally migratory, and it is essential to remember this point when searching for them. Kashmiri shikaris are usually very stupid about this, and take sportsmen to nullahs below Leh in late summer, whose bharal and ibex change over to the Shyok side of the divide in June. Similarly the south and east flanks of any mountain mass will hold bharal in May, but they will be on the north and west in August. It is entirely a question of sun and humidity, and consequently of good feed ; for the snow melts more rapidly on the south and east and the vegetation is there dried up by midsummer.

This same consideration applies even more when looking for that grand wild sheep, the *Ovis ammon hodgsoni*. Ammon, as the sportsman calls them, only come into some of the side nullahs of the Indus Valley above and close to Leh in hard winters, and have there been known to breed with shapu (the resultant cross being known as *Ovis brookei* and classed as separate species for a while) though the two species are never

on the same ground in summer. They also reach the Tayar, 20 miles north-east of Leh, in winter, via the Tankse Valley.

For about nine months of the year they are to be found on the high plateaux of the Rupshu district, and the immediately adjoining nullahs, in the whole of the Changchenmo district, the country round the Pangong Lake and thence southward right along the east flank of the Himalayas to Sikkim and Eastern Tibet.

Wherever they live open rolling slopes and rounded hill-tops are essential to their taste, and they avoid broken ground, even large scree.

In summer they are habitually found at over 16,000 feet, and at that season only come spasmodically below that height ; not like bharal which may be found as low as 15,000 feet at any season, and go into ground far too steep and broken to be suitable for ammon.

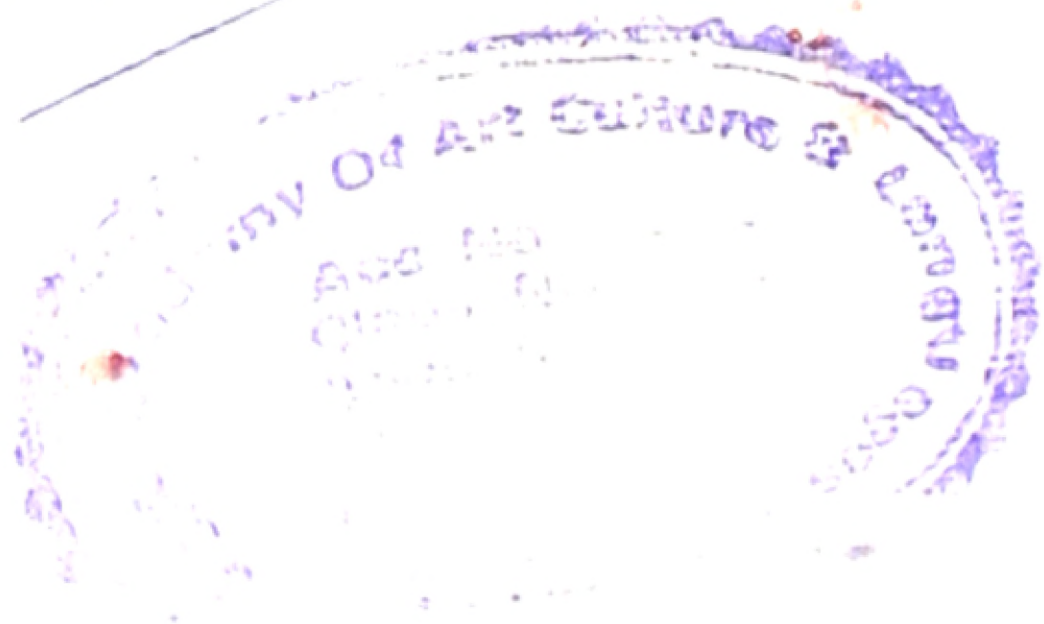
It is interesting, in comparing the respective altitudes at which shapu, bharal and ammon live, to compare also their respective density of coat. Shapu develop in winter a coat considerably thicker than that of their close relatives the Punjab oorial, but the texture is evident at a glance, the hair all lying the normal way. Bharal develop a coat of greater density and the hair is curled and matted, but rather coarse in texture. The ovis ammon has a still thicker coat still more closely woven, but not nearly as dense and fine in comparison as that of the Tibetan Antelope, or *chiru*, which lives in the coldest climate of all on the Tibetan plateau east of the Indus, and whose hair forms a fine springy mat so close in texture as to make a perfect non-conductor of cold, and so dense and smooth that the animal looks as if it were wearing a padded quilt.

The shapu's hair does not seem to be shed in masses, as is that of the other three, and they never look patchy as the others do in July and August, when the hair of both ammon and *chiru* may be seen blown about in masses by the wind, having been scraped off by horns and feet.



A HERD OF  AMONGST BLUE SCRUB

Cultural Academy



This density of coat, graduated in accordance with severity of climate, is just what is to be expected, but the Tibetan gazelle, or *goa*, provides us with a puzzle, in that, while it lives in southern and eastern Rupshu in the same severe climate as ammon and bharal, it never develops the dense protective coat of either of these sheep, and seems to be most inadequately protected against the bitter cold.

The Tibetan Antelope or *chiru* is only found in Changchenmo, and on the Lingti Tsiang plains to the east of the Karakoram Pass, though only a few females are usually to be seen in the latter area. In the Changchenmo Valley they are rarely found north of the river, sometimes come as low down as the Kyam hot springs, but the country round the Troakpo Kurbo Pass and Ning Ri is a certain find; the plain south of Troakpo Kurbo, at the head of the Mipal Loomba usually has the best heads, and I have seen eight good bucks together there.

Ning Ri is a great hunting ground, and I have had ammon, chiru, kiang and two fine bull yak in sight at the same time from camp.

If camped in the Mipal Loomba, it is as well to keep an eye open for armed Tibetan cattle thieves.

The chiru in Changchenmo are really immigrants from the large herds which inhabit Western Tibet, and it is a curious fact that nearly all the animals near Ning Ri are males. In July 1930 I saw two bull yak, fourteen ammon rams and two ewes, twenty-eight buck chiru and only three does.

The chiru is a most interesting animal whose tapering, forward-curving horns make a handsome trophy, 23 to 25 inches being the usual length of a good pair. The quilt-like coat has already been mentioned, but its curiously swollen muzzle, containing large air cavities is a strange feature which may have the function of slightly warming the air before it passes to the lungs. They have two inguinal glands running up, with 6-inch tubes, in the inside of the groin, whose function has never been determined; I dissected

out three pairs, but could detect no scent nor any definite connection with other organs. The Tartars say that the chiru inflate these glands to enable them to run faster !

The Tartars also say that a chiru has such a poor sense of smell that it can be approached down wind ; but two experiments convinced me that, while their olfactory nerves are not highly developed, they are quite efficient up to 250 yards.

Stalking chiru is none too simple a business as they have a trick of scraping a shallow hole for themselves in the gravel, which leaves only their horns visible, and these are far from easy to spot when the hot sun has created a shimmering haze. Then they are much bothered by a bot-fly which lays its eggs under the skin, and they suddenly jump up, whirl round two or three times, then gallop a mile and squat again as suddenly. This is very disconcerting in the middle of a stalk.

But they by no means confine themselves to the gravelly plains, and I have seen three good bucks at well over 18,000 feet on the hills above Ning Ri ; a long way above five ammon rams, which were feeding on the same slopes.

Yak only occur in India in the Changchenmo Valley, except an occasional stray at the head of the Sutlej Valley, and near the Milam and Lipu Leh passes in East Kumaon. They may not be shot in Kashmir territory.

Thirteen (cows and small bulls) is the largest number I have seen together ; this was on the low hills north of Kyam, where the Kugrung joins the Changchenmo River. Bigger herds occur in Tibet.

It is as well to be careful in assuming that any yak seen far from human habitation is a wild one. A really big bull yak is unmistakable as the thickness of his horns far exceeds that of any tame one, but this needs very careful examination with glasses. Tame yak will usually have a patch of white on the chest or tail, and this is never the case with the wild one ; but some tame ones are also wholly black and they

wander to great heights in search of food, while a Tibetan will just take the load off a sick or tired yak, load it on to a spare one, and leave the first to fend for itself.

Even the experienced have been deceived, and there is a well-authenticated story of a very well known sportsman who, having spent weeks trying for wild yak near the Niti Pass, eventually shot one, and, on going up to it, found that it had a bell round its neck !

Ammon are, of course, the chief objective of high altitude stalking, and are most noble quarry. The trophy, the sport, and the country all combine to make ammon hunting an experience memorable to any man who delights in pitting his physical fitness and wits against the natural advantages of a wild animal.

Open rolling hills and ridges, patchy and streaked with snow on their northern sides, snow-capped if over 19,000 feet, are what the ammon like. At first sight there appears to be nothing for them to feed on, low dark-green "dama" (Tibetan gorse) being the only vegetation showing. Then a closer examination reveals little clumps of olive-grey "boor-tse" (whose roots, eked out with yak dung, are the stock fuel for camp), and yellow tufts of grass, hardly visible against the yellow gravel, which appear so withered as to afford no suitable nourishment for anything larger than a mouse. Yet it is on this grass that the larger animals principally live, cropping right down to the almost solid centre of the tufts.

There are other small plants in sheltered situations ; and of these a small whitish thistle growing close to the ground in the hollows of the higher hilltops, is much liked by ammon.

Ammon wander over larger areas than any other hill game, both in search of food and to avoid the Tibetan yaks and sheep ; though, on occasions they may be found close to grazing yaks, and in August, 1933, I found rams round the Pogmore La in little side nullahs temporarily free from

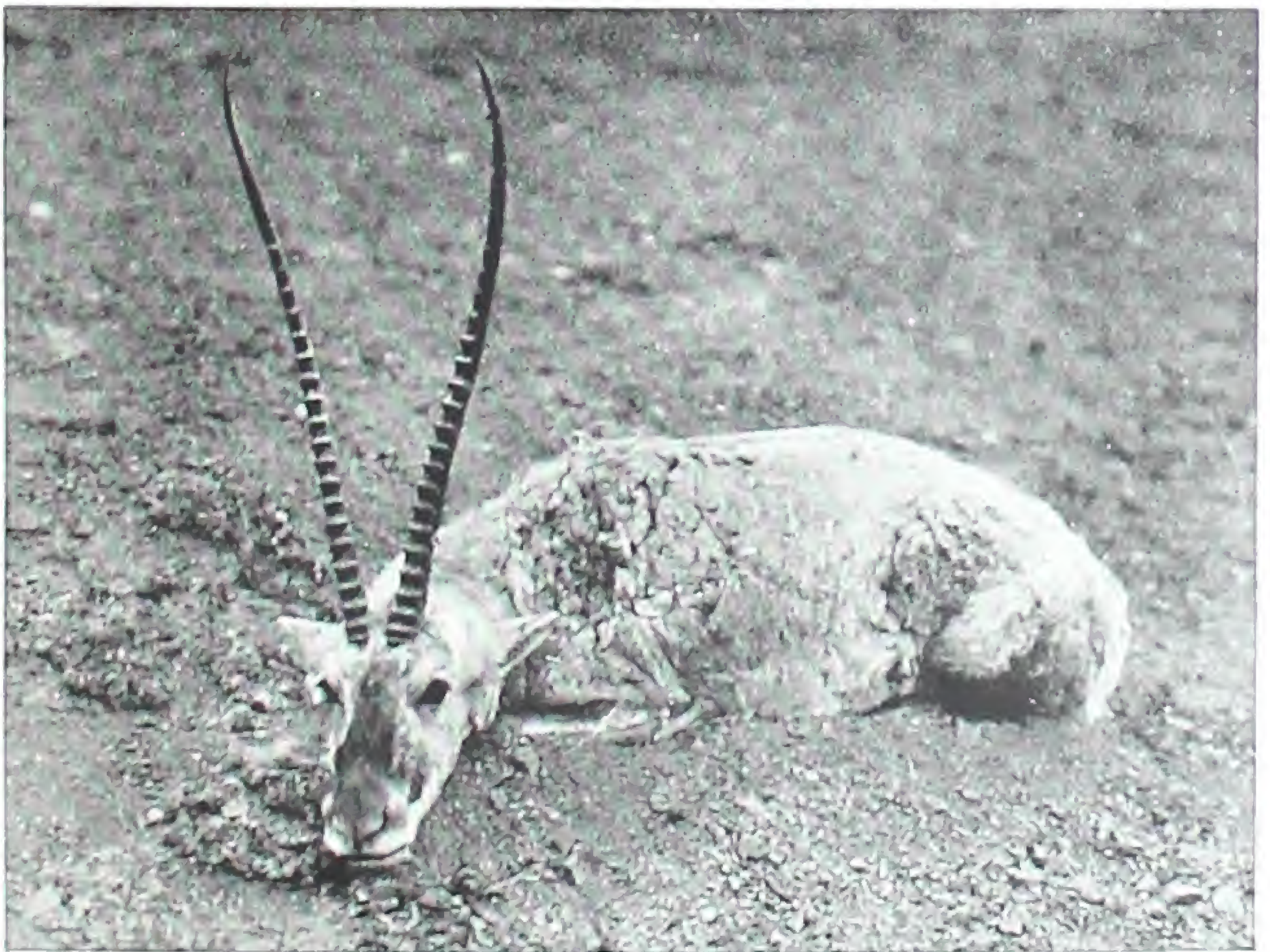
yaks, although there must have been over three hundred of the latter grazing in the adjacent ravines not a mile away.

A big ammon ram usually has a white neck, and this is the first thing to look for; the points of the horns should also turn up and, in most big rams of 45 inches or over, will be almost level with the eye; and invariably the horns will look too big for the beast, so that he droops his head when walking. Generally they are first seen lying down or feeding on the lee side of a big hill, and there will be a long walk round to get the hill between them and the stalk, and the greatest care has to be taken to keep the right side of the wind, which is tricky in the extreme on these lofty snow-patched mountains. Then their hillsides will be open and devoid of cover, with big rounded ridges which render a long crawl necessary and one's head and sit-upon too painfully visible long before the shoulders can be raised sufficiently high for a shot; the spiky *dama* causes the most acute discomfort if used as cover, its clumps are always just too high to shoot over, and projecting sprays invariably obscure a shot from the side. A sun which bakes one's back, alternating with a bitter wind which freezes the fingers when in the shadow of a cloud or rock, also help to render the trials of an ammon stalk acute in the extreme; but it is worth it every time, as is proved by the fact that nearly every man who has hunted these grand sheep wants to go back and do it again.

On or close to ammon ground in Rupshu, goa (Tibetan gazelle) are often to be found, though not north and east of the Indus. The Hanle district is the best area for them, and they have increased there of recent years, and on the Chawar Plain and on the open flats near the Nima Mud ford. They were plentiful on the Kiangchu Maidan and the Pogmore Pass twenty years ago, but seem to have vanished from there now; I saw none in 1933, and the Putta Takta area, north of the Tso Kar Chumr held only three females that year, although once it was the most favoured district and



OVIS AMMON, RUPSHU



TIBETAN ANTELOPE, CHANGCHENMO

Cultural Academy



a sanctuary for goa. These pretty little gazelles, which have wonderful eyesight but little sense of smell, go high in summer, and I have met them on top of the divide between the Tso Moriri and Tso Kar Chumr; it was there I saw a buck chasing a ball of shed ammon hair, which was being trundled along by the wind, and he was jumping over it and shying at it like a puppy at play.

In snowy winters the goa suffer greatly from wolves, as their sharp hooves cut into the frozen crust over which the splayed-out pads of the wolves travel with ease.

When looking for goa it is advisable to get well up the slopes commanding any plain favoured by them, as they are fond of feeding in the bottoms of big watercourses and the hot sun raises a heat haze whose shimmer makes it most difficult to spot the little beasts when on the same level. Once, when crossing the plain at the junction of the Zarra and Rukchen nullahs, there were ammon, goa and kiang in the haze at the same time; and I found it quite impossible to distinguish which was which; actually stalking seven goa under the impression that they were ammon and walking openly past two ammon without discovering that they were not kiang until within 200 yards of them, when they fled.

Kiang of course, are always with one on the Tibetan plateau. From Rupshu to Changchenmo these irritating brutes are to be found from the bottoms of the valleys at 15,000 feet to the snow line at 19,000 feet. Singly or in parties of five to seven their insatiable curiosity makes them a perfect curse to the stalker, for no sooner do they see a man earnestly endeavouring to escape the keen eyesight of ammon, or other high altitude game, by an advance behind doubtfully adequate cover, than they immediately come to investigate his actions; trotting round him, wheeling to stare, kicking up their heels and playfully biting each others' necks, and generally treating him as the unwilling ringmaster of an impromptu circus. Having alarmed

every head of game in sight, they will then depart to graze peacefully, quite satisfied with the morning's amusement.

It is useless to continue a stalk when their long dark-brown faces appear over a ridge and they line up to gaze ; the only thing to do is to sit down facing away from them and take no notice. They may then indulge in a few wheezy snorts, but will usually walk quietly on, stopping every now and then to look round. It is often most exasperating to have to waste time like this, but once their curiosity is really excited it is good-bye to any chance of that particular stalk being successful.

It would seem easy at first to get good photographs of kiang, but I found it much the reverse. In the flat valley bottoms the heat haze made it impossible to get a sharp picture, while on the hills they seemed to know immediately what was wanted and be determined to frustrate my efforts. Although seeing them frequently every day in the Kyangchu-Pogmore area, it took me a week to obtain a satisfactory photograph. Their strongly contrasting shades of brown, with stiff black mane, blend surprisingly with the damadotted hill-sides of light-cream gravel.

Of the minor denizens of these windswept uplands the marmot is always with one ; scampering from hole to hole of their colonies, sitting on top of the hillock of spoil at the mouth whistling shrill annoyance at the intruder, great incisor teeth showing in the rounded head ; they are pleasant additions to a desolate landscape. Other rodents are the little pikas, or Mouse Hares, which inhabit the same areas but are much more shy, only showing when they think the coast is clear. How these little beasts obtain water is a problem, when, as on the Kyangchu maidan, their colonies are sited on arid gravelly ground far from the nearest surface water. They are unable to travel far from their holes, for they would inevitably fall victims to wolves, eagles or other enemies ; while, although marmots' holes go down more

than ten feet below the surface, the little pikas' limit is barely a yard.

Other animal life is strangely plentiful in this apparently barren and inhospitable region. Such hardy migrants as the Tibetan Raven, which perches on a rock by the kitchen tent and says "Glonk! Glonk!" in anticipation of a meal, and the various species of duck and geese which come to the gloriously blue lakes, might be expected; but there are numbers of pipits, larks, rose finches and other small birds feeding and nesting on the ground and in the gorse, while Coursers run about every sandy plain; hares, Tibetan Partridges and Sandgrouse give sport on the hill-sides; while every marshy gully is full of butterflies, which flit about many a windy ridge-top, lizards scuttle among the rocks and the bigger streams abound with fish.

The marching is full of interest at all times. The weird colours—green, blue, chocolate, red and grey—of the hills between Tankse and Pobrang; the wonderful view from the top of the Nurbo La, looking down on the Tso Moriri Lake, whose water is surely bluer than any in the world; the rambling crag-perched monasteries and the caravans of mixed humanity driving yaks, ponies, donkeys, sheep and goats, each animal with its appropriate burden; all are peculiar to Ladakh. In Leh itself the main street of the bazaar, frowned down on by fort and many-storied *gonpa*, presents more samples of varied humanity gathered from the backblocks of Asia, than can be met with in any other spot.

A hard country inhabited, where there are human habitations, by simple, hard-working, pleasant, dirty people; it and they have a charm and interest, difficult to define, but always there, which make the end of one trip but the hoped for continuation of the next.

CHAPTER XI

BARASINGH, OR KASHMIR STAG

THERE is no animal in the world so closely associated with British history as the red deer, for many of our laws, the badges of our great families, and outstanding historical episodes had their origin in the chase of the stag or preservation of the wild red deer for royal sport.

In England, and particularly in Scotland, we are apt to think of the red deer as almost exclusively an insular possession, whereas in Central Europe its hunting and preservation, with, above all, critical estimation of trophies, has been carried to the highest pitch for many centuries; with the resultant evolution of a hunting etiquette stricter than any of the drawing-room, and a set of laws of feudal derivation which, even up to the Great War, remained of almost feudal severity.

Farther east the red deer persists through Asia Minor and the Caucasus, where his habitat grows rougher and wilder, and farther east again culminates and ends in the glorious country of the mountains bordering the lovely valley of Kashmir.

There can be no grander surroundings to enhance the joys of stalking than amongst the pine and birch forests which clothe the rocky ridges, deep ravines between filled with lush feed for the deer, climbing to open slopes of short green turf below granite cliffs and patched with low clumps of dark-green juniper.

There can be no finer quarry than the Barasingh, as he is called by the British sportsman, or *hangul* as known to

the Kashmiri, and there surely can be no more invigorating climate than that of those forest-clad hills in September and October.

But first, that we may the more enjoy our sport, let us have knowledge of his ways and life history.

The Barasingh (*Cervus kashmirensis*) is distinguished from the other species of his group by his horns, which have the brow tine always shorter than the bez and never develop a cup at the crown; and by the light yellowish caudal disc which, fringed with dark brown, is often the most conspicuous thing to catch the eye in a bad light.

The coat is variable from dark grey to a dark brown, and I have seen dark liver-coloured stags, their hair so sleeked that it looked as though it were watered, and these stags invariably carry fine heads. The hinds do not vary as much in colour as the stags, but appear to be lighter in youth than in their prime, then turn greyer.

The fawns are heavily spotted and hinds sometimes carry spots in their second year.

Stags run 50 to 54 inches at the shoulder, hinds 44 to 46.

The horns carry 10 points normally, and the brow tine is shorter than the bez, but I have seen as many as 16 true points, not counting "snags" or "offers," but a royal of 12 points (6 on each horn) is hard to get, and symmetrical heads with points above that in number are rare in the extreme; I shot the only absolutely symmetrical 14-pointer I have seen, in the Liddar Valley in 1919.

It is impossible to lay down the law as to what constitutes a good head, but length is far from being the sole dominating factor. The record head of 51½ inches is a straggly 11-pointer, narrow and with a horrid kink in the right beam. One of the finest "wild" heads I have seen was a 48½-inch 15-pointer in the mess of the 4/6th Rajputana Rifles, massive and well-pearled; while a 46½-inch royal, shot by Capt. Leese, 60th Rifles, in the Liddar Valley in 1905 remains in my memory as the most symmetrical head with long and heavy

points. Both these heads were very heavy, and a good girth and strong points are essential to establish a trophy's claim to excellence.

Spread is an added glory, and much to be desired.

The finest stag I have ever seen was at the top of the Liddar Valley in October 1933: a royal, about 48 inches on the beam, with a spread of over 40 inches, every point on the massive beam was long and matched its opposite. The three glorious tops on either crown were so level, that I believe a board placed across them would have lain even on their tips. This stag lived on the face of a projecting bluff between two deep nullahs, and on three days I tried to stalk him for a photograph, but failed. On the third day he was sent off by a stupid village shikari trying to be clever, and I never saw him again, but he probably still lives to furnish sport, a grand adjunct to grand scenery. He will soon be past his prime, so let us hope for a merciful bullet for him, and another fine trophy for someone's walls.*

Among the many fine heads I have seen there has been none with a cup in the crown, and, to my mind, this peculiarity does not add beauty to the horns of a British red deer, so its absence in the Kashmir species is not to be lamented.

I have myself shot a 40-inch 8-pointer, and seen two more of 42 inches and 44 inches; in all of these the trez tine was missing. They were from Kishtwar, the Kishenganga and the Sind Valley respectively, so it is not a local aberration.

Often a master stag will stamp his pattern on the horns of a wide area, and such a one must have dominated much of the Liddar-Tral divide during the war, for in the succeeding years several fine heads were shot with abnormally long trez tines; one in particular, shot by Major-General Pitt-Taylor had trez tines of 17 inches in length, and I saw one

* I told H. H. Holkar of Indore of this stag, and sent my shikari with him next season (1934). He bagged the stag, which turned out to be a 49½ inch royal.

stag, which I failed to get up to, whose trez's must have been longer.

The best heads used to be fairly evenly distributed over the whole area of the barasingh's habitat, which comprises from the Kishenganga Valley to Kishtwar, and the south-east flanks of the Pir Panjal Range; but nowadays it is rare to see a good head from the Kishenganga or Bandipur direction; they are too much poached by Gujars. The Maharaja's State rukh of Dachigam has acted as a nursery for fine stags, and the finest heads of recent years have come from adjacent areas. Within my knowledge three 50-inch heads have been shot on the east side of the Sind Valley in the last ten years, the last being killed in September 1931. I saw a 10-pointer in October 1933, up the Aru (W.) branch of the Liddar, which must have been just about 50 inches. Then farther south-east barasingh have increased greatly in the lower half of the Wardwan Valley, and fine heads are to be got from this area, which is little shot.

Farther south again the deer are spreading into Chamba State and increasing steadily owing to strict protection.

The first horns of a stag, when it is termed a "pricket," appear in the spring of the year following its birth, and are usually short and stick-like, only about 8 to 10 inches long, and show no sign of points; but I have seen them with a slight fork at the top and indications of a brow tine.

The second pair of horns, the stag being then termed a "brocket," have well-developed points, usually six in number and are 20 to 25 inches in length. In March 1934 I saw four 6-pointers together at the south-east end of the Kashmir Valley, and with them was a well-developed 8-pointer which looked to me also to be a brocket, and whose horns were 28 to 30 inches in length. These five youngsters were evidently the progeny of two different sires, the formation and similarity of horn being most conspicuous in three of them and in contrast to the remaining two.

I have several times seen young 8-pointers with horns

of 20 to 25 inches in length, very thin in the beam and with very short points, which I have taken to be brockets.

The trez tine would seem to be the last developed.

The third or fourth pair of horns will normally have the full 5 points on each side, and a stag will carry 10 points for several years in succession before reaching his prime at nine or ten years of age, when he will begin to throw out extra points, usually beginning with the bifurcation of one inner top. The number of 11-pointers met with amongst old stags is remarkable, and I find that of the fifteen stags that I have shot, all over 40 inches on the beam, there have been one 8-pointer, six 10-pointers, five 11-pointers, two royals, and one 14-pointer: these are all true points without counting snags or offers.

The stags will fight furiously, and points are often broken to the detriment of a head.

Their enemies are numerous. Black bears are destroyers of new-born calves, and will work along a hill-side trying the upward wind for the scent of hind and young.

Leopards are a terror to hinds and young deer, but the stupidity with which hinds treat a leopard makes it a marvel that any survive. Kashmiris say that a leopard will spring on a calf and lie on it without killing it, until its bleatings draw the mother near enough for the leopard to seize her, and the calf is also then killed. Two reliable observers have told me of coming on a scene which would bear out this Kashmiri story, and in each case the interruption sent off the leopard and the calf was quite unhurt, although the leopard had been lying on it.

Such behaviour by the hind is easily explained on the score of maternal affection, but in the Liddar Valley in October 1927, being attracted by the noise, I saw five hinds advancing in an open semicircle barking and steadily drawing nearer to a leopard, which was lying at the foot of a pine tree; unfortunately a stray eddy gave them my wind and dispersed them all when the hinds were within fifteen yards

of the leopard. Another observer, who has spent many years in Kashmir, told me of a similar happening, when the leopard was lying openly on a rock, one of the hinds eventually advancing to within five yards and then being seized by the leopard, which my informant drove off by firing his shotgun in the air. A full-grown stag is a match for a leopard, and will face the cat with lowered horns swept menacingly from side to side.

By far the worst enemies of the barasingh are the Gujars and the shepherds ; and within the last few years barasingh have almost disappeared from many of their western haunts in the Kishenganga Valley, where Gujars are particularly numerous. In the Sind and Liddar Valleys Gujar villages have increased and the deer have vanished from their vicinity. Twenty years ago the Lang Nai in the Liddar was excellent ground for deer, but the Gujars settled at the mouth have increased and in 1927 I saw but one solitary stag, which was on passage.

Most damage is done amongst the hinds, and many are shot in summer by the shepherds high up above the tree line.

Foot and mouth disease has also taken terrible toll of the deer in the last ten years, and the cause of this must be put down to errors in preservation. Every winter large numbers of deer crowd into the safety of the State rukhs, of which the principal, and far the largest, is Dachigam. In February and early March 500 to 600 deer are allowed to assemble on the low ground at the mouth of this rukh, which is much fouled by village cattle, and allowed to remain there, instead of being driven to the ample protection of the rukhs immediately adjoining on the east where there is plenty of clean grazing. These deer contract the fatal disease and carry it up with them to the high grounds when the snows melt, infecting others and spreading the disease over a wide area. Fortunately barasingh are fairly conservative as to their summer haunts, and return regularly to the same

areas, so that the south-eastern districts seem to have escaped the infection so far.

Yet there are plenty of barasingh left in most of their haunts, and this is ascribable to their wariness and partiality for cover.

In April or May, when her time comes, a hind will slip off in a dense thicket to calve ; usually amongst the undergrowth of *skimmia* or in dense hazel at lower elevations. For forty-eight hours the calf is in great danger from bears and leopards, but then staggers to its feet and quickly acquires strength to out-distance the first and take advantage of its dam's warnings when there is danger of the second. Usually the hinds will make up small parties ; possibly five or six in number, perhaps three of them with calves at foot, a couple more which calved the previous year (for they usually calve in alternate years), and a wary old yeld hind in charge of the party.

Young stags usually form parties of their own, from three to six in number, as do old stags.

As the snow melts they greedily follow the fresh green grass upwards, until by midsummer they may be found on open moors at 12,000 to 13,000 feet. Some of them penetrate far back over the passes, and they are then to be found on the hills beyond the Zoji La, in the vicinity of the Kamri Pass, and in Tilel. In early September they begin to descend, the hinds first, while the stags mostly remain and clear their horns of velvet in the birches, thrashing many a sapling to shreds.

Usually the spring and autumn lines of migration are well marked, the deer using the same levels along main ridges and rarely crossing a big valley. There is no main migration as used to be supposed, the movements of the deer being entirely regulated by the feed available. Thus the deer of the Liddar-Wardwan divide spend the summer on the uplands on the east side of the crest and, while the deer which winter on the east side of the Liddar Valley

travel north-westward to their mating grounds, those of the country round the Marbal Pass arrive there from the north and east. The Kishenganga Valley deer mostly summer west of the Tragbal Pass and in Tilel, then converge in September towards Gurez and Bandipur.

By mid-September most of the stags are clean, but even then few of the big ones come down below the birches until forced down by hard frosts or an early fall of snow, and, though the shooting season opens on September 15th, it is best to wait another month before trying for a really fine trophy.

In the first week of October the stags begin to roar, though in 1905, after 101 hours unceasing rain, I heard four stags call on September 4th, and never another sound for six weeks. The young stag has a high whistling note, like a police syren, but one in his prime a long crescendo bellow ending in a high note, and sudden drop; "Aunghr-r-r-r-e-e-oh," while a really big fellow will seldom roar, but utters a deep low moan, particularly when lying down.

Many a good stag never quits the forest, and never joins up with a party of hinds; only cutting out an occasional one and consorting with her for a day or two. I once saw a fine 13-pointer in Kishtwar which had twenty-three hinds for his harem and two young stags as outliers and sentries, though usually the number of hinds to a stag is three to ten. These parties almost invariably feed in the open spaces, either at the top of the tree-line, or between tree-clad ridges, and it is from them that the sportsman under the guidance of a Kashmiri shikari usually takes his toll; for the Kashmiri is helpless in forest.

As a first essay in Himalayan stalking an attempt on the barasingh has a great deal to recommend it. The ground is easy of access, for three days at the most from a motor road will take one to the most favoured nullahs, while much of the ground in the Liddar Valley and towards the Hoksar Pass is within a short day's march. Then supplies are easily

obtainable and shikaris innumerable. The only objection, from the point of view of the serving officer, is that leave is hard to get at the best time of year—October 15th to November 15th.

The deer are much lower in the winter, but remain much in the shelter of the forests, feeding on chestnuts and browsing on bushes, while they also invade the higher fields for stubble.

Let it be assumed that six week's leave has been obtained from October 1st, and the sportsman has arrived in Srinagar on that date by the adventitious aid of a complaisant C.O. and a "flying start."

The first thing is the choice of a shikari, and this needs great care, for it is not to be governed by the same consideration as—say—a trip to Baltistan.

It must be born in mind that the meat of a barasingh represents a definite pecuniary asset, sufficient to overbalance any shikari's scruples with regard to a shootable head, and the Kashmiri shikari, whose avarice is beyond computation and who is one of the world's most plausible liars, will outdo all previous performances in his efforts to secure a sahib to hunt barasingh.

It is essential to select a shikari who is well acquainted with the best ground, and one who proposes hunting ground west of the Sind Valley should be discarded immediately; he is almost certainly lying about the number of deer and backing his luck in the hope of meat and good pay for a couple of months. If a man applies for the job and proposes the Sind or Liddar Valleys, or country still further east, make him discuss his proposals with the map. The deer do not come down the main ridges and enter the nullahs lower down the valleys until forced by the weather, and the average shikari is apt to disregard all such conditions and go for any nullah where he has ever seen a stag before. Thus, if a shikari were to propose to take me to Versirran nullah in the Liddar in the first week in October of a rainless

autumn, I would never engage him, for it is extremely sunny and the feed dries up easily ; but if he were to propose Mamal ten miles higher up I would certainly question him further, for Mamal has much high and broken ground and the big peak behind it attracts rain, so in a wet autumn it can be unpleasantly trying, but in a dry one there is nearly always a good stag to be had by taking a bivouac high up.

Having engaged a shikari make him send out a man immediately to arrange pony transport, and follow next day in a lorry to the nearest possible point to the nullah it is proposed to occupy. There the pony transport should meet one, and it frequently pays to engage it for a whole month, as coolie transport is expensive, and ponies often most difficult to get, when on stag ground ; and, if the ponies are present at hand, it is possible to take immediate advantage of weather conditions which entail a change of plan.

Take the camp well up the nullah, but conceal it as thoroughly as possible ; a grassy flat is often to be found by the bend of a stream, well hidden by pine forest and, a most important point, invisible from the feeding grounds.

Having pitched camp, find out the best vantage points from which to view the feeding grounds, and watch morning and evening for a couple of days before actually walking over the ground, at the same time listening for calls.

If no sign of deer is seen or heard, climb up higher and try the small secluded ravines, particularly those holding water and a thick growth of such vegetation as wild angelica, which is much loved by the deer.

When traversing the upper ground, move with the greatest care and never hurry, paying particular attention to the wind. Barasingh are far from conspicuous, their grey-brown coats blend amazingly well with lichened pine trunks, and even in the open on a shady slope their resemblance to a fallen log is often misleading to the point of disaster, and seeing a stag without his seeing you is essential to success.

Do not expect to see monarchs of the glen on the skyline ; if barasingh cross an open skyline it is almost invariably at night or so late in the evening as to be valueless for stalking purposes ; careful inspection of shady places, slopes criss-crossed with fallen trees, and hidden dips at the top of the tree-line will eventually reveal a great dark-grey stag moving quietly and warily, keeping always within easy reach of cover as he crops the grass.

If hinds are seen, make absolutely sure that there is no good stag with them before moving on ; it may take hours, but it is worth it. I once watched a dozen hinds for three hours without spotting a good stag, which I was sure was somewhere there, and eventually detected his horns, sticking up among the broken boughs of a fallen pine on the far side of which he was lying, 70 yards from his nearest hind.

I have located a calling stag within an area 80 yards square, and taken an hour to spot him with the glasses.

Once seen the head has to be judged, and in this matter put little faith in the Kashmiri shikaris ; the trashy heads brought back to Srinagar are sufficient evidence of their untrustworthiness, and, at the height of the stag season, I have seen head after head pass through Pahlgam (at the top of the Liddar) not one of which should ever have been shot.

The first thing to look for in a head is the number of points ; normally 10 are essential to a shootable head, as 8-pointers over 40 inches are rare in the extreme. Then look at the tops ; which should be the longest points by far, except in the case of abnormal trez tines ; little 6-inch forks at the top of the horns are sure indications of a poor head in a 10-pointer.

Any head of over 10 points is shootable, though it may be a poor one " going back " ; I once shot a royal of only 34 inches on the beam.

Having made up your mind that a stag is a good one, due consideration must be given to the question of time.

If the spying position is a good one and there is any doubt of being able to get up to the beast before he retires to lie down for the day, it is far better to watch his movements, noting the route by which he returns to cover, and will then come out to feed again any time after 4 p.m.

If the feeding ground has a hot afternoon sun on it the stag may delay his emergence till sunset or dusk, or may feed on shadier ground on the other side of the cover in which he lies up for the day.

An early fall of snow will usually make the stags call, and they are then given to coming out on the upper margs, as soon as the weather clears, and roaring defiance at each other. I once found three good stags making a deafening noise, bellowing at each other on a snow-covered marg up the Aru branch of the Liddar, and they were a grand sight on the sunlit snow, each with a group of hinds around him.

In some years stags hardly call at all, especially when it is very dry, and in October 1927, I hunted in four nullahs of the Liddar and the Trisangam (E.) branch of the Bandipur nullah and only heard three calls in the Liddar and none at Trisangam.

The stags were very high that season, as there was no snow up to 14,000 feet, and on November 1st I shot a good stag at that height, which I had watched lie down on snow in the shade of a big rock, although the cold was bitter and 2,000 feet lower down every rock in the main streams was heavily wreathed with ice.

It is very rarely that barasingh are seen on bad ground, and then only when making a change of ground, but there is often a long plug up to the high ground, while a stalk may entail traversing slopes in small forest where soft mould is held up at such a steep angle that a footing is most difficult to obtain, and the return journey makes the latter half of the old tag: "*... sed retrograre difficile est*," come forcibly to mind.

So far little mention has been made of the stag which

never quits the forest to feed in the open, but browses on bushes or grazes in secluded ravines and clearings. Almost invariably solitary and carrying a grand head, these stags provide the best sport, which involves considerable knowledge of the art of still-hunting. A stag of this type is usually first located by his tracks, often discovered at some soiling pit, where he comes to wallow in the cool mud. The general direction of the tracks being ascertained, it is better to try and locate them again in likely haunts rather than to keep steadily on them, unless they are very fresh. It may take two or three days to puzzle out the habits of the quarry, and throughout the greatest care must be taken not to alarm him; moving slowly, avoiding noise such as breaking branches, and above all never talking except in very low, just audible, tones. A constant watch must be kept for the slightest movement in the forest ahead and *above* the direction of the tracks, for the stag will almost invariably turn uphill for a little before lying down. If a good stag be come upon unexpectedly in the forest, it is very unlikely that he will give a chance of a shot before bolting, and it is usually far better to leave him alone and try for him next day. He will keep a very sharp look-out for some hours, but, seeing and hearing nothing, will assume that the disturbance was accidental and relapse into normal behaviour.

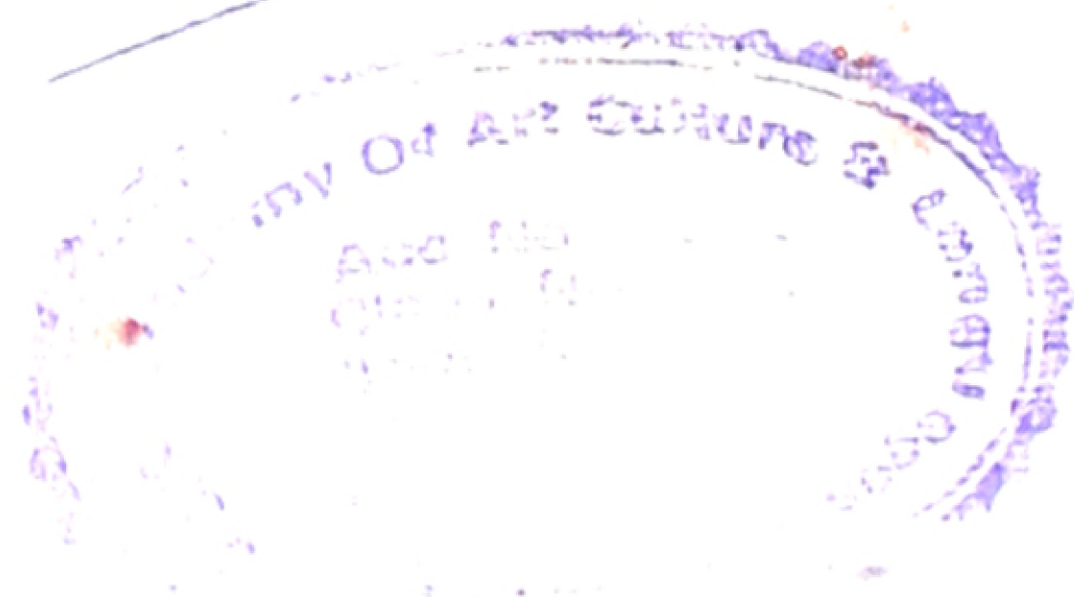
One habit these forest stags have is of the greatest assistance to the hunter. Being solitary, yet often desirous of the company of a hind, they call at any time of the day, though rarely twice in the same hour. The stags which feed in the open will often call frequently in the early morning and late evening, although with several hinds, but very rarely at other times of the day.

When a call is heard from a forest stag it is best to wait ten minutes or so on the chance of his calling again, then make one's way carefully and quietly to a point estimated to be about three hundred yards from where the last call was made, and sit down to listen. If another call is heard,



BARASINGH GOING BACK TO COVER AFTER THE MORNING FEED

Cultural Academy



and the place of origin located, then creep in slowly and watchfully, lifting dead sticks to avoid treading on them, never allowing a branch to spring back suddenly when pushed aside, testing each foothold where there is any likelihood of a slip, and doing everything possible to avoid startling pheasants into departing with raucous outcry.

If no other call is heard search for fresh tracks, moving in the same cautious way. It is better to spend five minutes getting over a fallen tree without noise than have a dead branch crack loudly through a hasty movement, and so spoil the work of many hours, or even days.

Perhaps the first glimpse of the stag will be his feet moving below the level of the pine branches, or the top points of a horn, or merely the violent shaking of a sapling as he rubs his horns on the stem ; but whichever it may be, stop, get ready to cover the nearest gaps, and let him do the rest of the moving. Pushing further in will almost certainly alarm him ; there will be a sudden cessation of movement, a tense moment as he listens, then a sudden plunge downhill and he is gone.

But if he is not alarmed and the wind is right (and, if possible, always keep a little above him to get the benefit of the uphill trend of nearly every breeze), then he is sure to move quietly and slowly, sooner or later, to cross some open gap at 40 or 50 yards.

This forest hunting is a most fascinating game, but one that never meets with the approval of the Kashmiri shikari, who is clumsy in the extreme in cover, an inept tracker, and impatient of slow movement. Keep him behind and do the job yourself and, if he is careless and treads on cracking sticks, clears his throat, or talks unnecessarily, or loudly, tell him he can go back to Srinagar and then carry on yourself with local help : the sport will probably be greater if he does go back.

If the stalk is successful and a good stag falls, then supervise the skinning of the head with particular care, and

on no account have it mounted in Srinagar. A mounted stag's head is very bulky, a costly thing to cart about, and difficult to keep in good condition in the plains of India ; but it may be that a particularly fine trophy or one that has given memorable sport is thought worthy of preservation complete with mask. If the work is done in Srinagar the modelling will be anything from poor to execrable, the mask will be filled with an insanitary collection of old rags, paper, and uncleaned wool, and the curing so bad that the hair will fall off in large patches in the first monsoon. If a stag's head is to be mounted it is worthy of being done really well, and England is the place to have it done.

But, fully mounted or not, the trophy is bound to conjure up memories of grand sport amid glorious surroundings, and inspire the hunter to go back again and again to feel the keen breeze at the top of the tree-line, thrill to the long crescendo of a big stag's call, and feel his pulse hammering as he crawls in to the final act as a great grey beast stands doubtful, sensing danger, yet not knowing surely whence it comes.

CHAPTER XII

CARNIVORA

SLOTH BEAR,

(*Melursus ursinus*.)

VERNACULAR.—*Bhalu*, Hind ; *Rinch*, Rajputana and Western U.P. ; *Aswal*, C.I.

DESCRIPTION.—Running to 6 feet in length in an old male, and about 5 feet in a female, the long and coarse coat is black, except for whitish spectacles and snout : the latter is elongated and almost naked. There is also a white patch on the chest which may resemble the chevron of the Himalayan Black Bear in size and shape, or may be almost absent.

DISTRIBUTION.—From Ceylon, throughout Peninsular India, Central India and Southern Rajputana, the Southern U.P., Northern Bengal and the Himalayan foothills from the Siwaliks southward to the Assam border.

HIMALAYAN BLACK BEAR.

(*Ursus torquatus*.)

VERNACULAR.—*Kala bhalu*, Hind ; *Rinch*, Punjab, Poonch and Eastern U.P. ; *Harpat*, Kashmir.

DESCRIPTION.—The black coat is not so coarse and shaggy as that of the Sloth Bear, and in good specimens may have a distinct gloss. There is a white chevron on the chest, which is sometimes reduced to a thin straight line. The males may measure as much as 6 feet straight between pegs and weigh up to 400 lb. : the females weigh up to half that amount and measure up to 5 feet 4 inches.

DISTRIBUTION.—From Northern Sind right along the,

frontier hills, through Baluchistan, Waziristan to the Khyber ; and through Upper Swat, Buner and the Black Mountain country to Kashmir and the Murree Hills. Thence all along the outer Himalayas to Burma and West Central Siam. The largest individuals are found in Kashmir, and those from the extremities of its habitat average much smaller. Not usually found above 10,000 feet at any time, but may be found at any elevation below that, where there is forest.

THE HIMALAYAN BROWN BEAR, or SNOW BEAR.

(*Ursus isabellinus*.)

VERNACULAR.—*Lal bhalu*, Hind. ; *Shin harpat*, Kashmir ; *Drunmor*, Baltistan.

DESCRIPTION.—Attempts have been made recently to divide up this bear into several local races, but have been based on too few specimens and a disregard of the migratory habits of the species to be accepted as sound. The normal coat in spring, when the bears emerge from hibernation, is light brown or *café au lait* with lighter “points.” The extremities, back and ears may be almost white, and are usually so in specimens from the Kishenganga Valley at that time of the year, but darken considerably during the summer. In autumn they may retain a general *café-au-lait* colour without white points, or be of any shade of brown, though I have never seen one of a sufficiently rufous colour to merit the term “red” ; which is derived from the Hindostani use of the word “*lal*,” which means either red or brown. There is often a white or light brown collar, and usually a white chevron, at any time of the year, but this may be absent in some individuals. The coat is at its best just before hibernation, and is good in the spring, though the texture is by then rather coarser. A big male bear may be 7 feet in length, straight, but the females are much smaller, only about 5½ feet. The biggest specimens usually come from the Chenab Valley and the Wardwan.

DISTRIBUTION.—Occasionally in Waziristan and Afghanistan, the Upper Kurram Valley and Sufed Koh. Thence throughout Chitral and Gilgit, throughout the outer Himalayas at elevations above 8,000 feet, to Nepal, and probably beyond to the mountains north of Burma.

THE INDIAN WOLF.

(*Canis lupus*, *Canis pallipes*.)

VERNACULAR.—*Shonku*, Ladakh; *Behriar* (also used for hyæna), Northern India.

DESCRIPTION.—Scientists seem now to have decided that the Ladakh wolf is a race of the European wolf, but are undecided as to whether the wolf of the plains, formerly classed as a separate species and named *Canis pallipes*, is a true species or also a race of the European wolf. The biggest wolves, running to 6 feet 3 inches over the curves, come from Ladakh, and the wolf of the plains does not reach within a foot of that size as a rule. But I have seen a very big wolf on orial ground in the Punjab, and skins of over 6 feet in length from Baluchistan, and it would seem that cold winters produce big animals. The plains animal is usually darker than that of the hills, and I have never seen one of the cream colour which some old males attain in the Tibetan plateau, while the Baluchistan wolves are usually sandy, with blackish backs. (Also see text.) The plains wolf is also devoid of underfur, but specimens with and without this have been obtained in the middle hills, and the wolf being very migratory, it is impossible to say whether these are visitors from the plains or the higher hills, or permanent residents.

Black cubs are found amongst others of ordinary colouring in the same litter in Ladakh, but do not seem to occur in the plains.

DISTRIBUTION.—Sparsely in Peninsular India and in the drier parts, but increases considerably in numbers in Central India and the Central Provinces. Thence throughout the

north of India, being most plentiful in the southern United Provinces. Plentiful in Ladakh and Lahoul.

SNOW LEOPARD.

(*Felis oncia*.)

VERNACULAR.—*Sufed chita*, Hind. ; *Bharal Hay*, Gahrwal and Kumaon.

DESCRIPTION.—This most beautiful of the carnivora is distinguished by its longer and finer coat, and the blue-grey cloudings to the solid spots, from the common leopard. Its size is a little smaller on the average than that of the common *Felis pardus*, a large specimen rarely touching 7 feet straight.

DISTRIBUTION.—Throughout the Himalayas and Tibetan Plateau, to as low as 7,000 feet, though very seldom coming down to this elevation. Preys almost entirely on game, but kills sheep in winter, and is then trapped in pitfalls by the Ladakhis. In early spring they are sometimes on the same ground as the common leopard ; notably on the right bank of the Chenab (or Chandra-Bhaga) in Kishtwar.

COMMON LEOPARD and TIGER.

No description necessary.

EXCEPT for the two Himalayan species of bear, carnivora are usually but chance-met when stalking ; but there are occasions when even a tiger may be stalked and, of such, there live in my memory a handsome tigress sunning herself outside a shola in the Nilgiris, and a leopard lying on top of an ant-hill in the Terai, waiting for para to come out and feed.

I have only twice seen that beautiful animal, the Snow Leopard, though its habits would lead one to think that, being not uncommon, it would frequently be the object of a stalk. But its powers of concealment are evidently much above the average, for, in districts where its tracks were on

every ridge-top, a very careful watch failed to reveal a single one.

But the Himalayan bears afford real stalking, and even that quaint and shaggy mass of long black hair, the Sloth Bear, gives an occasional opportunity in the latter half of the dry season, when the trees are mostly leafless.

In February, in the Satpura Hills, the *gula* figs are ripe and all the jungle-folk gather to glut themselves on the fallen fruit. The Sloth Bear, being a grosser glutton than the rest, is often later in returning in the morning, and may be spotted, lurching along the shady side of a hill, on its way back to the family caves.

Being out to try for a photograph of sambar one morning, I had failed to find a stag and, the sun having risen, decided to return to camp. I was standing on a col between two hills with a couple of local junglis, and, as we turned to go, one of them put up his hand and exclaimed "Sambar!"

There came a rustling of dead teak leaves from a dip full of trees some sixty yards away and, seizing the camera, I sent the men round below the animal and myself ran round ahead of the direction to which the sound trended.

Instead of a sambar a big Sloth Bear came into sight, ambling gently along the hill-side through the bamboos a hundred yards above me; occasionally stopping to turn over a stone for insects or nose a drift of dead leaves. To get a photograph I had evidently got to get ahead of him; so I ran down under cover of a projecting knob, and then as hard as I could for two hundred yards along the hill-side, up a gully to the crest of a small spur, where I leant against a small tree and waited.

I could hear the bear rustling amongst the leaves about thirty yards away to my left and out of sight behind some bamboos. He must have found some toothsome beetle or other dainty, so I got a couple of minutes' welcome respite in which to recover my breath.

Then a moving patch of black showed through the

bamboo stems on my left front, and I got ready for action. A slow exposure was necessitated by the bad light, it being not yet eight o'clock and the shady side of the hill; so, as he began to show clear of the bamboos and cross a small gap, I called out "Halt!" and he halted. I made an exposure and, as he decided that he was mistaken about the strange noise and went on again, I took another.

Then he emerged again on my right front so, hardly hoping to get him to halt again, I said "Stop there, please!" and, to my great surprise, he sat down not twenty yards away and began sniffing the air, muttering and grumbling to himself the while. I used my two remaining plates, though with little hope of a good result, for a shaggy mass of black hair amongst forest early on a February morning does not lend itself to picture-making, then watched him for a few minutes. The rising morning breeze began to stir the hair on the back of my neck, so, as my tree was so thin that I overlapped considerably on either side and bears have a way of charging downhill when startled, I withdrew carefully, leaving him still pondering on the strange noises of the jungle.

A little way back I met my junglis, and we returned with fresh plates to try for more pictures; but he had moved on and we could not find him again.

Himalayan Black Bears are not nearly as short-sighted as Sloth Bears; in fact their senses are in every way more acute, so that in spring, when they feed on the new grass of the open slopes, there is good sport to be had with them.

Except in the spring black bear are decidedly retiring, feeding on a succession of wild fruits and raiding the maize fields in the autumn: when the maize is gathered they glut themselves on walnuts and rowan berries to fatten up before the hard days of winter. In Kashmir and Kulu they seem to hibernate more or less completely from late December to mid-March, and I have met with them at 9,000 feet on March 21st; but in the lower hills of the Eastern Hima-

layas they may be encountered at any time of the year, while I have known them out and about in thick snow in January on the Takht-i-Suliman massif in Baluchistan. In the North West Frontier Hills they are too few in number and too much persecuted to become a nuisance, but in many parts of the Himalayas, where forests of pine and ilex, dense thickets and deep caves, provide unlimited cover, they are often dangerous pests. In 1930 in the Bandipur Valley in one week I met three men who had very recently been mauled by bears raiding their fields ; and they destroy a large amount of maize, in addition to what they eat, by flattening the stalks so that the unripe cobs rot upon the ground. Mulberries, walnuts and wild pears all draw these animals to feast on the fruit, even in broad daylight at times.

The old males, and occasionally the females, may take to killing sheep and cattle ; while they are accused, on what seems to be reliable evidence, of killing many new-born deer.

Altogether they are most undesirable neighbours and, in districts where they are numerous, it is no wonder that the villagers clamour for their destruction.

They seem to be locally migratory to some extent, for, while there are always a good number in some areas, such as the hills between the Lolab and the Wular Lake, other places which hold many one year may be unaccountably devoid of them the next. This must be due to the abundance or otherwise of the local crop of wild fruit, and they undoubtedly have an uncanny knack of locating good feeding from afar.

It is curious that, in a fortnight of trying to photograph black bear at the head of the Bandipur Valley in May, 1934, usually a particularly good time of year and excellent ground for them, I never saw a single one. In every previous year I have never had the slightest difficulty in bagging one or two when wanted, and have often seen them and left them alone as not worth bothering about.

It is advisable to avoid getting immediately below a black bear, as it is far more likely to get one's wind and may charge very fast if startled at close quarters or wounded. When severely hit they can come down a steep slope at a tremendous pace, even rolling head over heels at times, and can inflict ghastly injuries with their claws in a few seconds, almost invariably attacking the scalp and face.

The Red, Brown, or Snow Bear of the Himalayas is a most inoffensive animal as a rule, living high up at all times and, while they occasionally raid the highest fields of peas or *trumba* in late autumn, they do not come low enough to damage other crops. I once shot an old bear high up the Shingo-Shigar which had been regularly raiding some fields of peas at about 12,000 feet. Intercepted at daybreak 1,000 feet higher up on the way back to a refuge in a jumble of enormous scree, and killed with a bullet through the base of the neck, the old glutton was stuffed so full of peas that they trickled out of his mouth as he lay dead.

These peas are grown in a dense intertwined mass about 18 inches in depth, the small pods being intricately involved with the stems and leaves ; yet it was remarkable how very few leaves, stems or pods there were in this bear's stomach, the greater portion of the contents being shelled peas. It is a mystery how a bear can contrive to separate the peas from the rest of the plant in the dark.

The Brown Himalayan Bear can climb trees, and I have twice seen them up rowan trees ; while there is a tall tree carrying bunches of purple berries in October, which grows freely on the Kashmir Valley-Wardwan divide, and I have seen indubitable evidence of brown bears climbing for the fruit 50 feet or more from the ground. There are no black bears at all at this elevation (about 10,500 feet) at that time of year, while the tracks are easily distinguishable.

It is a common thing for old male brown bears to kill sheep, and occasionally cattle or ponies, in late autumn. I had always assumed this to be due to the urge to fatten

up before hibernation, but in the Kulu Valley, in May, 1933, I shot a brown bear in the Manali nullah which had killed 23 sheep in a week. I back-tracked it and found three separate places where sheep had been eaten. This bear, like many sheep-killers, seemed almost indifferent to human interference : charging into a flock guarded by two or three yelling and stone-throwing shepherds. There was a very late spring that year in Kulu, and severe weather had held back the normal vegetable growths on which bears feed in spring, so driving this bear to evil ways ; but sheep-killing by brown bears is more common in Kulu and Chamba than in Kashmir.

To obtain photographs of brown bear, I selected the country around Minimarg, at the head of the Kishenganga Valley, and arrived there in the last week of May. I had never experienced much difficulty in stalking them, though it sometimes entailed a long ascent to get above them ; for their eyesight is poor and, though their power of scent is exceptionally good, once the right side of the wind is attained an easy shot is usually to be had.

The reports as to the number of bears were favourable, and I had every hope of getting several photographs. My experiences during the ensuing four weeks are worth recording, if only to demonstrate the fallaciousness of assessing one's chances of good photographs on the same basis as those of successful stalks with straight shooting as the denouement.

The morning after our arrival we spotted a couple of large bears about 2,000 feet up the hill-side facing camp, feeding in a ravine a little below the snow. The wind was from the east, so a traverse had to be made and the western side of the ridge climbed. We then came on to the crest, among some rocks overlooking the bears' first feeding place, to find that they had moved about 300 feet higher up, and were now grubbing amongst some rocks at the head of a steep-sided ravine on the snow line some 400 yards above us.

A farther climb, this time along a very craggy ridge, and we got level with the bears, which were hidden by the bulge of the hill, and leaving the two men with me (the local shikari and tiffin coolie) under cover and telling them to stay quiet, I went on alone with the camera. While I was making my traverse the local shikari climbed on to a projecting rock and saw the bears on the broken face of a small cliff, on the opposite side of the small gully for which I was making.

I was within two or three yards of my objective, when there was a rush from behind me as the local shikari seized me by the arm, pulled me to a rock and, thrusting the rifle (which I had left with him) over the top of it, almost shouted "Maro ! Maro !" in his excitement. The bears were feeding peacefully amongst the rocks and juniper of the little cliff 70 yards above, but could not help hearing the uproar and seeing the gesticulating figure of the shikari. As soon as I could free myself from the clutching fool, I slipped round the rock and tried for a photograph. But the bears were on the shady side of the ridge at 7.30 a.m., and it was difficult to find and focus them in the bad light ; so that they were off before I could manage it, and all I got was a very distant snap as they crossed a snow-field in the sunlight high above us.

The weather then broke again, and for two days mist, rain and snow defeated any attempt at a search. Then it cleared a little and the same two bears appeared, high up in the snow amongst some rocks and evidently very nervous. They did not feed at all that day and were quite unapproachable. We did not see them again.

A couple of days later two more bears were located in a nullah two miles farther west, and I made an afternoon stalk, which was interrupted by a violent storm of hail and rain. This must have driven the bears to cover, for, though nothing untoward occurred, they were not to be found when we reached the hill-side where they had been feeding.

We did not see them next day but, very early on the succeeding morning, as we entered their nullah, they were feeding on the ridge dividing it from the main valley.

Leaving the shikari on a spur opposite them, to signal their whereabouts if they moved, we went up the nullah below them and, crossing a snow-bridge, climbed the hill to the west of them; the wind being from the east. It was a long climb, taking about an hour and a quarter, then finishing with a nasty little traverse across a cliff of loose, shaly rock in order to get on to the ridge above the bears.

I began to descend, the shikari signalling that they were now lying down below me, when suddenly a musk deer bounded out a hundred yards below and stood looking up at me; undoubtedly in full view of the bears which were certain to take alarm. As I got the camera ready the shikari signalled that the bears were going up in the direction from which we had come, having been frightened, as was revealed later, by the first goatherd of the year driving his flock up the slope below.

Scrambling out on the crest of our very steep spur, I caught a glimpse of the bears making up the gully beyond. They were certain to go westward to the cover of a broken cliff bushed with cedars, or a patch of pines beyond, and they were fairly certain to cross the ridge just beyond me at a point some 60 yards below where I lay. But would they stop? It was 7.30 of a cloudy morning, and 1/16th of a second was the fastest exposure I could venture; so that camera movement would be most difficult to avoid.

Pressing the camera into my armpit I focused on the probable crossing place and, grasping a juniper bush with my left hand to prevent slipping over the edge of the cliff, waited in tense excitement.

The heads of the bears appeared, then they came into full view climbing on to the ridge. Would they halt?

The big one looked up, caught sight of me and stopped,

the small one sat down to look back at the goatherd below. I pressed the trigger. A tenth of a second later they vanished into the gully beyond, so quickly that I doubted whether I had been in time, and they did not show again.

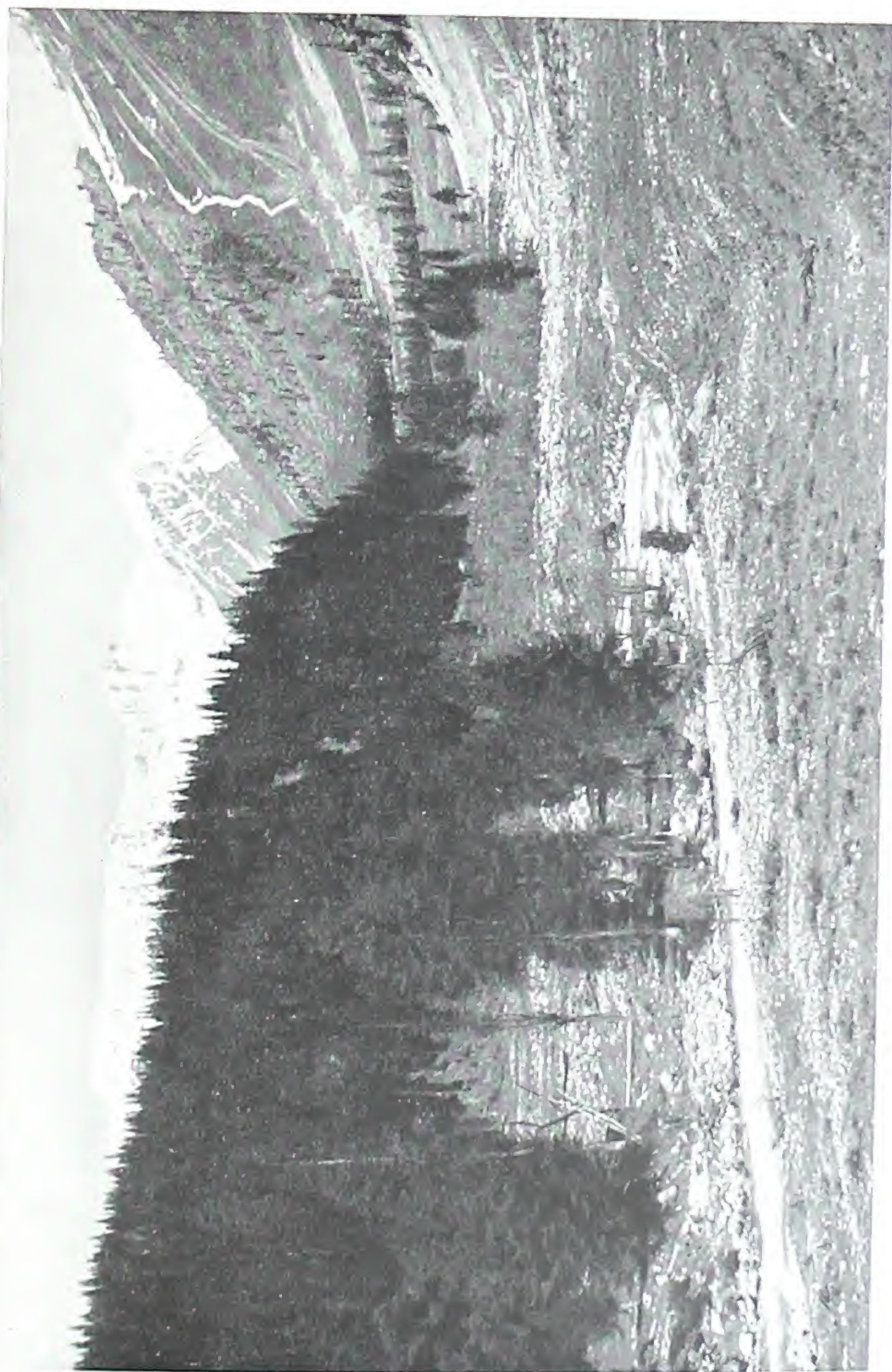
The musk deer turned up again on the cliff below, and a long scramble, finishing in a slide downhill most detrimental to the seat and elbows of my puttoo suit, resulted in an indifferent photograph, the light being the wrong way. A second attempt was defeated by the giving way of the boulder which supported my feet, and its bounding downhill with a series of reverberating crashes which put the musk deer to flight. I only just saved myself and the camera, but my hat preceded us downhill, luckily on the way back to camp, by several hundred feet.

Then the anxious half-hour in the developing tank and inspection of the negative. Thank heaven! A picture and a good one, considering all things. It was to be my only one.

We moved camp six miles up the beautiful Nagai Valley and tried again, ibex also being included in our efforts. A week's hard work resulted in some ibex photos, and two more bears were seen but mysteriously disappeared.

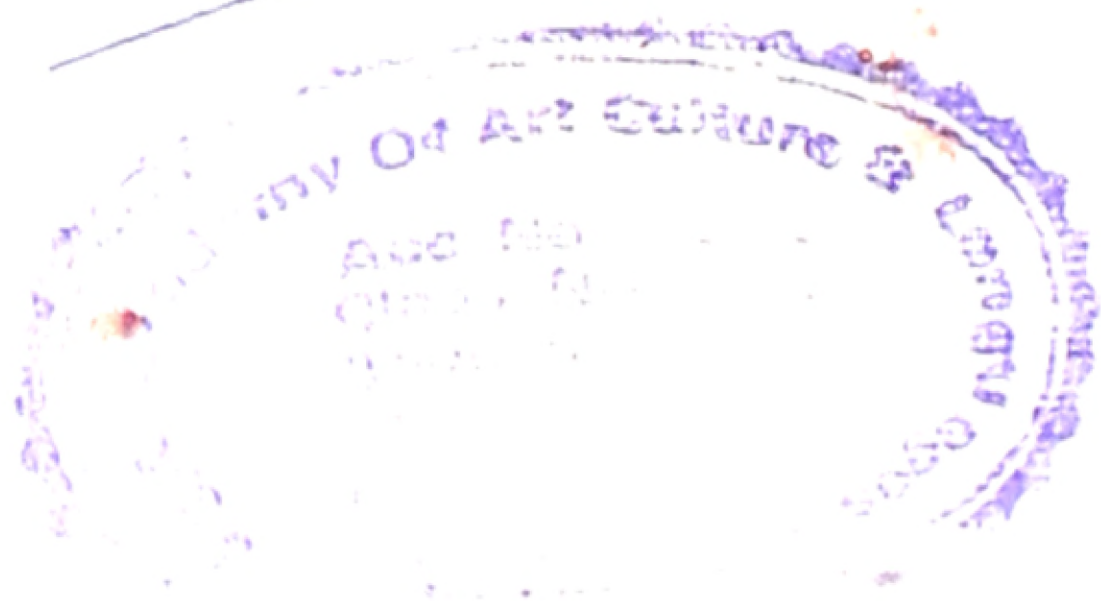
Another move of camp four miles higher, and the first evening two bears were seen; but on the opposite side of the torrent which roared down the centre of the valley, and which was formed by the melting snow from big nullahs at the head of the valley, all of them being unfordable. The bears were on the south side just below the junction, while camp was on the north bank a mile lower down.

A start at dawn and a long shivering wait for the bears to emerge from the forest which clothed the slopes below the grey granite cliffs which hold the ibex. About 6.30 they appeared from a thick patch of pines and, moving along the foot of the cliffs, began to feed near the top of a big open slope green with grass and dotted with the enormous white heads of giant cow parsley.



IN THE NAGAI VALLEY

Cultural Academy



We moved up the north branch and crossed by a foam-spattered log thrown across between two big rocks, then over the middle and eastern branch by a wide snow bridge, and climbed to the crest of a tree-clad ridge right opposite the bears' feeding ground. They were still there and very busy eating, but between us and them were wide grassy flats with a furious torrent flowing down the middle, and we had to go a mile farther up, traversing open slopes in full view of the bears, to cross at the mouth of a narrow gorge from which the cataract foamed, by a snow bridge much seamed with ominous cracks.

We had negotiated the open patches with great care, halting whenever the heads of the bears were turned our way, but we were now closer, and had to keep under the steep bank, often very wet, for half a mile, to get down below the bears and the right side of the wind: then up a tortuous little gully to the shelter of a clump of pines and disappointment. Only nine o'clock and the bears were already moving back to cover, though it was a cold day: they had only fed for about two and a half hours instead of the usual three or four. They crossed a mass of scree above us, then turned up a ravine full of old snow, where one of them slipped and slithered half a dozen yards downhill, much to my satisfaction (having so often done it myself), and climbed the narrowing cleft to the wide shelf above the crags, disappearing into a clump of birches.

Gone to bed for the day, I thought, and sent the village shikari off to camp to fetch us all some food, expecting a wait until at least 4 p.m. before they would come down again to feed.

At noon they suddenly appeared again, descending the rift, and began to move slowly towards their former feeding ground. A rapid advance under cover of the pines and as we reached the upper limit of the trees, the bears were feeding 80 yards above us on the steep ridge which divides the main valley from the southern branch, but no

picture was possible owing to vegetation and rocks interfering : it was essential to get above them.

Having waited until the bears had disappeared southward behind the crest of the ridge, I left the shikari and coolie under cover of a big pine and climbed the western flank to the foot of the cliffs above, then made my way along them and above the feeding ground. No sign of the bears. Concluding that they had moved farther along and were concealed in some low ground, I continued my traverse for another 500 yards, but found no bears.

The sun had come out, the camera was heavy, the cliffs hard going, and I was very hot and rather cross by now. Deciding to go back to the shikari, descend to the flats below and have another search with telescope and glasses, I made my way back to a point about 40 yards above the pine tree where I had left Rahim Beg and whistled to attract his attention, but without result.

I whistled again, with the same want of response, then threw down a stone the size of a hen's egg a little wide of the tree. It bounded down, disappeared over a small hummock and—up rose the bears from behind it !

They had been out of sight, resting in a small hollow, having gone down the south side of the ridge as I climbed the west flank.

Here was rather a nice problem. They were 35 yards from me, not 15 yards from the pine tree, which was on their direct line of retreat, and I thought that Rahim Beg and the coolie were still there, probably asleep, and I had left the rifle with them.

Quickly concluding that I could do nothing to help Rahim Beg but might get a picture, I swung the camera on to the staring bears and pressed the release just before they bolted. They passed just where I had left the men, no uproar resulting, much to my relief, and retired up their original ravine just as the shikari and coolie appeared from behind a tree 50 yards lower down. They had seen the

bears working downward just after I left, and had crawled to other cover; unable to warn me for fear of frightening the quarry.

A rather disastrous morning, but, at least, I thought as we trudged back to camp, I had got one good picture!

I began developing operations. A piece of black safety-paper had stuck to the cut film when inserted into its sheath in the darkness of the changing-bag, and the negative was blank. I had merely discovered another unique way of not getting a picture!

I had several more tries during the following fortnight, but never got another chance: that was my last stalk after red bear.

To those who want a skin or two I would make an appeal never to shoot two bears together. They will almost inevitably be male and female, and the much smaller female never carries a good skin, either for size or texture of coat.

Shoot the bigger of the two and faulty judgment of size and range may result in a female, the smaller being a large cub, but there is always another stalk, and surely no one would knowingly shoot a female with so little profit to themselves.

There may be cubs of two years with an old she-bear, and I have seen two of last year's and one of this with their dam, digging for voles in late October high up amongst the rhododendrons, and a most amusing family party they made.

Red bears' coats are at their best in November or in spring, some of them, in particular those which live in bushes not very high up, becoming very patchy and unkempt in midsummer. Those that live really high and follow the melting snow to get new grass, do not seem to deteriorate much in coat. I have shot one near the Deosai Plateau on September 1st which had an excellent coat, and most of the Deosai bears seem to get up there well in advance of the shepherds and their flocks, and do not leave until

October ; as the Deosai Plateau averages 12,000 feet the climate is cold enough to keep the bears' coats in good order.

The cubs, born under the snow during the hibernation period, seem to reach maturity in their fifth year, but grow considerably after that. One or two cubs is the usual number, and I have never seen three, though the larger number is common with black bear. If there are two cubs they will frequently keep together up to their fourth year, but it is doubtful whether they hibernate together or merely in the same vicinity.

In May and June, the period of the rut, red bears are commonly seen on hill-sides on which grow large lily-like plants, producing in June a beautiful white head of flowers. The Kashmiri states that the bears eat these plants, but I have never seen them do this or observed signs of digging for the bulbs, in spite of careful watching ; and the special attraction of these areas remains unexplained satisfactorily.

They are great travellers and their recent increase in the Shigar Valley and in Suru is almost certainly due to immigration from the south : in the case of Suru, probably caused by persecution by poachers in the Kashmir Valley ; in northern Baltistan by the overflow from the Deosai. For red bears demand plenty of room, and operate definite bits of territory.

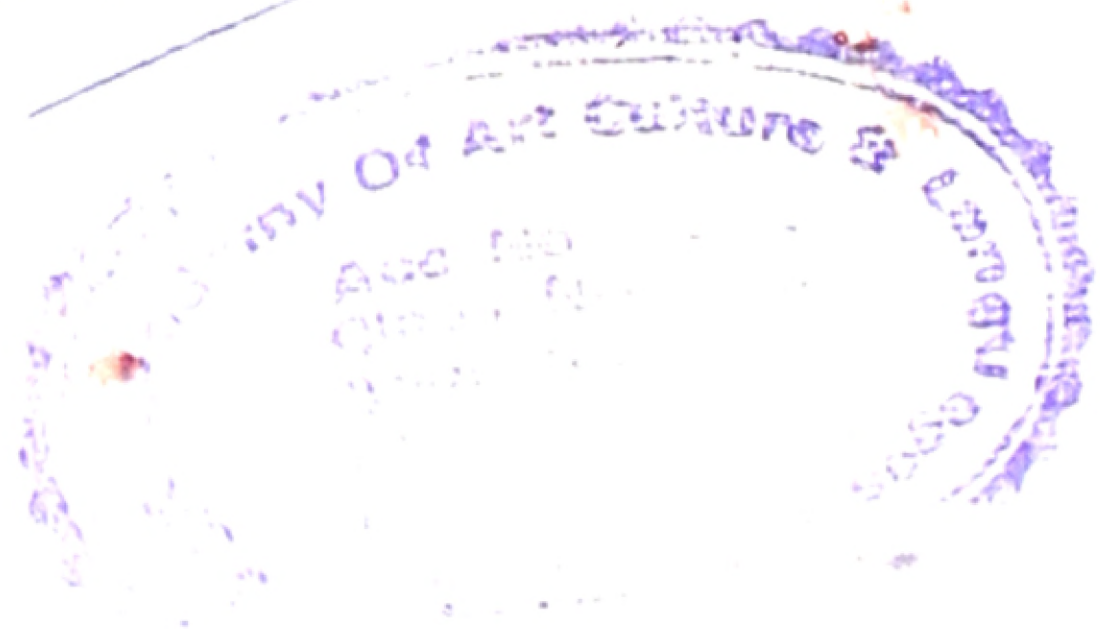
Sportsmen should be sparing of shooting red bear, and rest content with one or two skins. For they are easy animals to stalk, have been terribly persecuted in the past and, while a sheep-killer is always fair game and often difficult to deal with, the peaceful grubber for roots and voles is an interesting addition to any landscape and no certain criterion of the stalker's skill and endurance.

WOLF.—Hills or plains, sea level or snow-line, are all one to these terrible pests, as long as there is something to pull down and rend in pieces. They are unlikely to



HIMALAYAN SNOW BEARS

Walter Academy



turn up in forest or on a steep cliff, but nowhere is it impossible to meet with one in Northern India. I have made many inquiries into the possibility of the wild dog (*Cuon rutilans*) existing in Ladakh and Baltistan, and am sure that all the reports of their presence have been due to the Kashmiri shikari's habit of calling the wolf "Jungli kutta," the Hindostani for wild dog, and alluding to their colour as "lal" or red, which also means brown in Hindostani: in thirty years of trying for a skin or other definite evidence of wild dog in Ladakh or Baltistan I have failed to obtain either.

Of late years wolves have increased to an extent which has rendered them a plague in Ladakh and Lahoul, so that they even come down in winter and kill children in the village streets.

In the month following our crossing the Lachalang Pass on our way to Leh in August 1933, my wife and I saw nineteen wolves, and much of my camera work was ruined by them. Near the Pogmore La our ponies were scattered by two of the brutes, but escaped injury; then, three days later, during a rainy night at the Ponga Naga springs, three of them attacked our ponies, killed one within a furlong of camp, mauled four more and stampeded the remainder as far as a dozen miles away. They then returned and ate most of the dead pony, leaving the stomach.

Of the four ponies mauled, one mare had her udder torn, but the other three were all gashed on the right side of the throat and neck. Tracking them up it was obvious that the wolves had separated out this bunch of four and tried to drive them into the marsh at the north end of the Tsokar Chumr lake, and had leapt at the ponies' throats always from the right side, but failed to get a firm hold. I have noted this peculiarity of attacking from the right in an attack made by a wolf on a flock of sheep near Nimu Mud, in the Indus Valley and also in Rupshu. This wolf, after stalking and killing one of the flock, got them on the

run and dashed in amongst them, seizing five in succession by the right side of the throat and jerking its head downward with a twist, so that its own impetus threw it on to its nose and it was concussed. Only one of the five was killed outright, and on the shepherds coming up and driving off the marauder, who was engaged in tearing open the stomach of his last victim, the others got up and staggered about for a while, then recovered.

After this attack at Pongo Naga it took us two days to recover our ponies, and we then moved camp about six miles, to be awakened at sunrise by three wolves, one of them jet-black, howling on a rise a hundred yards from the spring which we were occupying. They were off as soon as I emerged from the tent with a rifle and, descending to the plain below, hunted a kiang which galloped to some of its friends and they all combined to drive off the attackers.

While *ovis ammon* and *goa* are the usual prey of wolves, *bharal* are not often killed, probably owing to their living on rougher ground. Marmots and hares form a great portion of the wolves' provender, but kiang are seldom attacked by them, and then only when a single kiang is attacked by several wolves.

Game does not seem to clear right away when wolves are about, as it so often does when a pack of wild dogs makes its appearance, but merely goes up high and becomes more watchful.

Two or three kiang together are scornfully indifferent of the presence of a single wolf and, in the Kayma Nullah in August 1933, I saw two kiang attack a wolf.

Cresting a ridge at about 18,000 feet, we saw a couple of kiang in a grassy hollow some 300 yards away, and dropped amongst some big scree to avoid frightening them, in case they should take away the *ammon* rams which we were after. We need not have troubled, for a big brown wolf came over the further ridge, obviously heavy with meat (we found he had killed a *bharal* ram in the next ravine),

from the direction of our ammon ; so all hope was gone of seeing them that day. He walked down to the bit of snow-fed marsh, drank, and lay down on a sun-warmed tussock of grass, the while the kiang regarded him with plain dislike. They circled him at twenty yards, staring and snorting, and the wolf took no notice for a while ; but they came nearer and he got up and walked further up the hill-side and lay down again, then the kiang resumed their grazing.

I began to crawl from rock to rock, hoping to get a picture, but just as I was getting within range a Ladakhi, whom I had left behind to watch the crest of the valley we had quitted, came after us and, missing us amongst the scree, walked across the hill above. The wolf came trotting down and passed between the kiang which were standing only 15 yards apart, and this insolence roused them to action ; for they ran at him in succession, striking at him with their forefeet. He dodged the attack easily, and was about to come nicely past me, when the bit of scree against which I was leaning turned over and he looked up and saw me, so I only got a distant photo.

That same morning I had seen, across the main valley and behind camp, six ammon rams feeding and lying down in a most favourable position for a stalk ; so at dawn next day we set out to get above them from the cover of the next ravine to the east. We reached a most helpful saddle on the crest and crawled over, only to see an enormous cream-coloured wolf prospecting the ground where our ammon had been the previous day. No ammon, but possibly a wolf picture to be had.

I crawled into a little dip, then down it for a hundred yards to cut across the direction of the wolf, which was coming up the bottom of the nullah towards me. I waited 50 yards above and he came steadily on, appeared at the mouth of my little dip and I got the camera on to him. As I did so I moved the case of my glasses, which I use for

focusing, and the spring lid shut with a slight snap. The wolf looked up and was off like a streak, so I got no picture.

Next morning we were woken by four wolves howling just across the bed of the stream which ran past camp: two of these were grey, one dark brown and one light brown. It will be seen that the colour is extremely variable in a Ladakh wolf, and, while there is a distinct tendency for at least the old males to grow paler with age, there is no constant rule. Black wolves are merely melanistic freaks which may occur in the same litter with cubs of normal colouration.

The wolves of the plains are much more constant in shade of coat, and are nearly always light brown, tending to grey with age.

Whether the high altitudes of the Himalayas and the plains of Northern India hold two or only one species of these animals, is a question which must be left to the museum worker, and when sufficient material has been accumulated for him to pronounce on the existence of constant specific differences. To those who have seen both, the plains wolves appear to be merely climatic varieties of the mountain wolves, being shorter in coat and rather smaller in size than their brethren of the higher hills; while they show no abatement of cunning and destructiveness.

In the plains they do not thrive to the extent that they do in the higher hills, as flocks are more carefully guarded and there is less cover of the type they like; but two turned up amongst the troops on manœuvres near Jhansi in 1928, and they are fairly common in ravine and thornbush country between that station and Cawnpore. Since then I have met with them in the Zhob Valley, Patiala, at Minimarg on the Gilgit road, in Lahoul, and in addition to above related instances, had one of my yaks killed by them in Changchenmo in 1930; small wonder I have no love for them.

LEOPARD AND TIGER.—While the actual stalking of

leopard and tiger is an improbability, it is by no means an impossibility, as both species hunt a great deal more by day than is generally supposed, especially in the cold weather.

I have actually seen a leopard conduct a successful stalk after oorial and then shot him: recently one turned up stalking the same herd of chital which I was after, and another after *para*, both of them paying the penalty.

Accordingly, it is as well to look out for chances at them, when armed with either camera or rifle, and the leopard will often show considerable boldness on such occasions, standing to watch the hunter. The white of the chest will then make a very nice aiming mark, and a bullet placed a couple of inches below the chin will drop him clean and without a kick in all probability.

Tigers are less likely to turn up and are a very different proposition when they do. If they are standing facing one at short range it is unwise in the extreme to shoot, unless there is a tree-trunk handy behind which to side-step the almost inevitable straight charge. It is difficult to kill such a big and tough animal outright, and the beast will almost certainly charge in the direction in which it is facing at the moment of the shot. If, of course, the hunter feels sufficient confidence in his shooting to make sure of dropping the tiger where he stands, that is another matter.

Let me here give emphatic warning of the failings of split or copper-capped bullets fired from high velocity rifles at short range, as it is highly probable that the stalker, in pursuit of non-dangerous game, will be armed with this combination.

It must be remembered that the higher the velocity the greater the strain on the bullet on impact, and, consequently, the shorter the range and resulting greater remaining velocity, the more likely is a weak-jacketed bullet to fly to pieces on striking the animal and fail to penetrate to a vital spot, merely making large wounds a little under

the skin. A further danger of such wounds in the case of dangerous game, is that, while the animal hit may show signs of collapse, due to the force of the shock on impact, it will very likely recover and exhibit unpleasant vitality just as the sportsman has grown over-confident through carelessness. The results are so apt to be finally discouraging to all further shikar, that I make no excuse for pointing the moral by relating the following recent experience of my own.

I was camped in a marsh in North Kheri, and had heard two tigers, evidently hunting together, roaring on each of the previous two evenings. The marsh was full of gond (swamp deer) and *para*, museum groups of which two species were my real objective, but I decided to have a try for these tigers, and worked out their line of hunting, which must almost certainly lie just south of some deep water-channels where a dry strip of land would take them to the burnt grounds covered with green grass and the favourite feeding places of the deer.

Owing to want of foresight on my part, I had come on the trip poorly supplied with .318 ammunition, and, having sent to one of the biggest gundealers in India for 100 cartridges loaded with soft-nosed bullets, the firm had sent me copper-pointed (hollow-nosed) bullets, being out of the soft-nosed. There had been no time to change the ammunition, I had fired the few rounds of soft-nosed I possessed, and was now left with nothing but these copper-pointed. I went out from camp about 4 p.m., hoping that if I had the luck to get a shot it would be a sitter with plenty of opportunity to pick the spot to place my bullet. I make no excuse for taking chances like this, as I had had previous experience of the inefficiency of these particular bullets at close range, but we all do take chances of this kind sometimes.

I sat on an ant-hill whose top was covered with coarse, high grass and waited as the sun got lower and lower. The strip of dry ground was 80 yards away to my front, and

up to it ran a long 40-yard flat dotted with ant-hills and bordered on either side by shallow channels filled with high reeds.

A family party of three para—pa, ma and baby—fed up to the foot of my ant-hill, saw me, stared doubtfully as I remained quite still, then moved off into the reeds to the west, looking back every now and then. Five gond hinds came out to graze by the side of the deep water a hundred yards away and, 20 yards nearer and right on the line I hoped the tiger would arrive, a fine para stag cropped the short grass. The sun went down and the light began to fade, so that I was just about to give up and return to camp, when a tiger grunted a couple of hundred yards to my left front, and another grunt answered square on my left.

I hunched on top of my ant-hill tense with expectation, watching the para stag. Suddenly his head went up and he stiffened, looking westward. Then he bounded off into cover, the white flag of his tail showing as he went, and twenty seconds later a grand tiger walked across the spot where the stag had been standing.

I had been forced to select my ant-hill rather farther back from the probable line than I had wished, owing to the doubtful nature of the wind, which, although it need hardly be taken into consideration as far as a tiger was concerned, might convey warning to deer, whose sudden flight would ruin all chance of success.

The tiger was walking fast, rapidly crossing the flat and into the strip of reeds to my right, and I jumped down from my ant-hill and ran hard to another, where I stood on a protruding bump and could see over the reeds. He had heard me and was standing looking back over his right shoulder 60 yards away.

I tried to rake him from behind the last rib, but the light was bad and I shot high and left, hitting him in the saddle, and he went down roaring with, I thought, a broken

back. His head and shoulders appeared above the yard-high grass and I had a try to finish him by a neck shot, but the light was too bad and I missed. I must close with him to finish the business.

It took me several minutes to struggle through the mud and reeds of the channel between us, and as I emerged on the far side my supposed broken-backed tiger was coming straight for me 30 yards away, at a lurching run. I broke his shoulder low down, just above the lower joint, and he went down again. I closed to 20 yards and he rose again and tried to get at me on three legs. I missed him, taking a chip of skin off the top of his head, and the roaring black mass lurched on. Taking another shot good and low, he went down once more: I had broken his left hind leg low down.

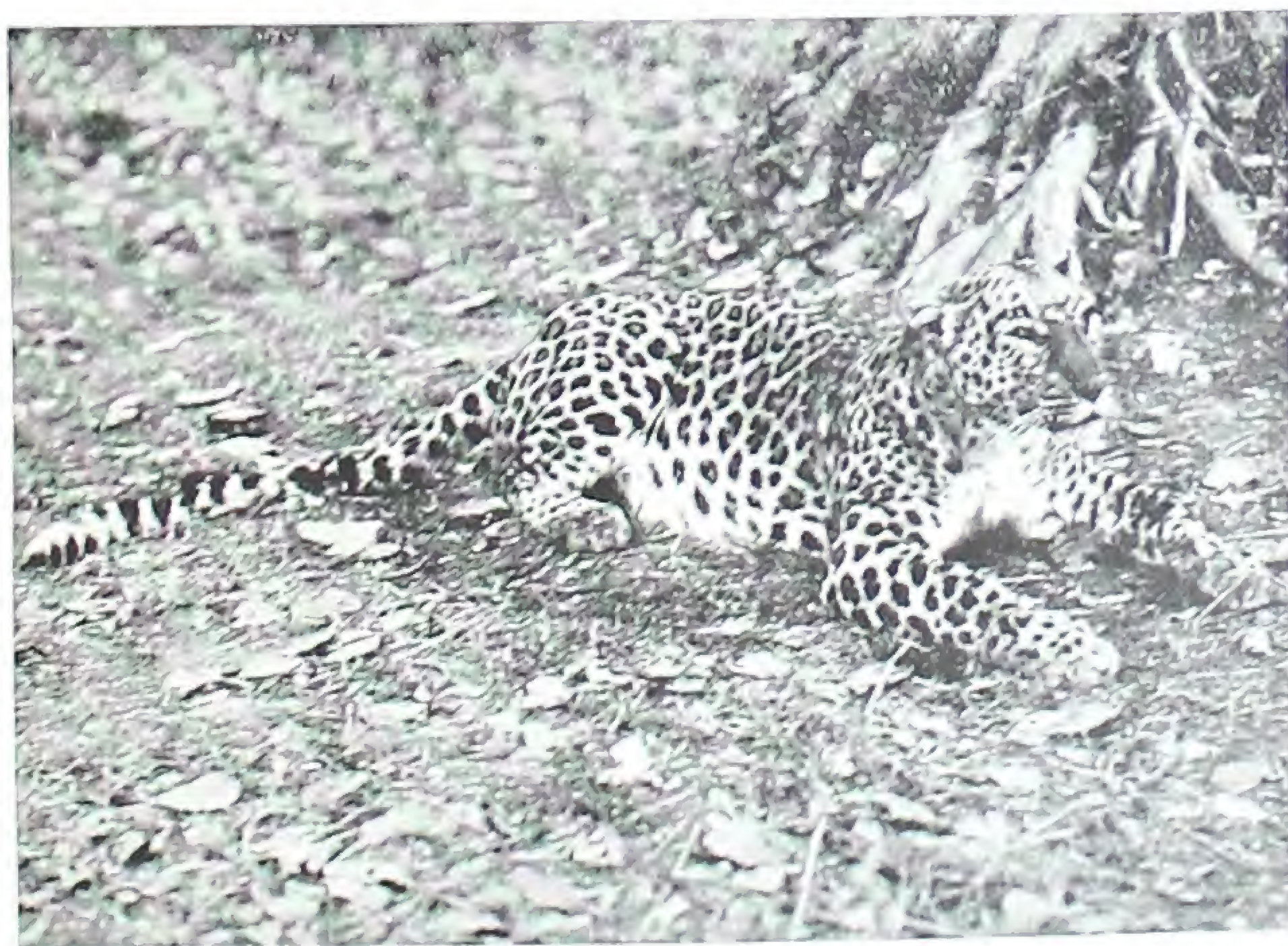
I then retired for a couple of minutes to recover my nerve, which was badly shaken, and went in again towards the terrifying roaring, which reverberated to such an extent that it was difficult to tell within five or six yards where my gallant adversary lay. He rose again within fifteen yards and three or four yards from where I had thought him to be, a black mass above the grass with gleaming white teeth showing in the faint light which was fortunately from behind me. I fired, and down he went, still roaring. This last bullet hit him in the "wrist," just above the paw of the right hind leg, but without breaking the bone.

It was not good enough, for it was now quite dark, the roaring still went on, and I was not at all sure that the tiger was incapable of recovery and quicker movement. Much as I regretted doing it, I left the gallant beast, made my way back to camp and sent in a chit to H., my host, asking him to bring out our one elephant in the early morning.

He was at my camp at sunrise, and we went off to look for the tiger, which we found had gone into the edge of some slightly higher grass about 50 yards from where I had left him.

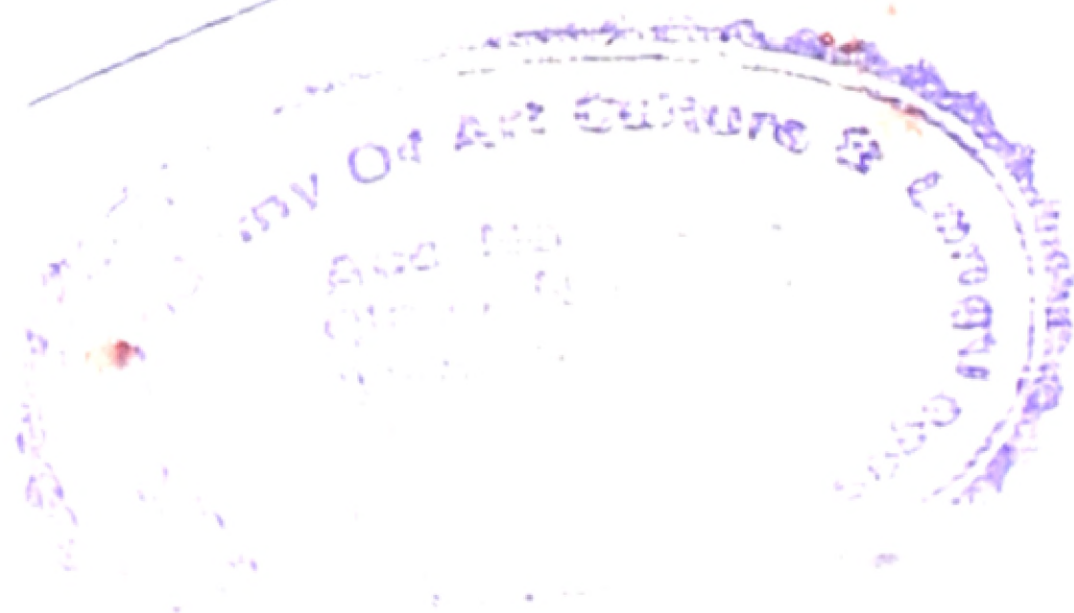


THE BIG TIGER, NEPAL BORDER



LEOPARD SHOT HUNTING PARA, NEPAL BORDER

Wetland Academy



The brave animal made a last effort to charge the elephant with a roar, but toppled over after five yards and I finished him.

He was a grand animal, one of the heaviest shot for many years, and in beautiful coat : for it was January 10th, and he had been living on the fat of the land. A regular winter sojourner from Nepal, he was known to have killed over a hundred buffalo, and countless gond.

Then came the skinning and post-mortem, which was decidedly interesting. The first bullet had struck high up in the saddle, broken up within two inches of the surface and, while part of the lead core and one or two fragments of the casing had travelled on and were lying against the bone of the spine, the remainder had emerged again through small slits in the skin and there was no trace of a fracture of the bone, the maximum penetration being about 12 inches. No wonder he had recovered sufficiently, during my struggle through the reeds, to attack ; and it was very fortunate for me that the moment had not been longer delayed, for the effects of the shock of impact would have worn off still more, and he would have come much faster.

It is probable that he was steadily recovering from the first bullet, and it was the broken right shoulder which almost anchored him. The bone was broken at the " wrist " just above the joint, and the bullet had flown to pieces, the lead core cutting through two ribs beyond without further penetration. The broken left hind leg, although there is only about 2 inches of bone and no muscle at that point, had a ragged exit hole.

I have killed a very big bull gaur, standing three-quarter on to me at 40 yards, with a .318 bullet which passed through the shoulder-blade and heart, and he dropped without a move, as did a tiger killed with exactly the same shot at 60 yards. Again I have raked a Kashmir stag from end to end at 70 yards. All these three examples were with soft-nosed bullets, and neither then nor at any other time have I had to complain of want of penetration, or of the bullet

failing to set up in the correct way—mushrooming without breaking up.

While skinning the tiger I learnt many things from the surrounding villagers, who had come, even as the vultures sitting on the trees around, to beg for pieces of the meat.

Thus the “*santok*,” as it is called in Kheri, being the floating clavicle known as “*birnak*” in the Central Provinces, confers irresistibility in love on any man who gives it to a woman. But the same bone of a panther, called “*tilia*,” is only a bringer of children.

Hang a piece of tiger-meat in a cattle shed, and it will keep off cattle disease.

One peculiar piece of shikar lore was to the effect that, if a natural kill is found the sex of the killer is easily known ; for a tigress bites off the tail of her kill in order to keep the tiger from interfering with it. That we had found a young gond stag killed by a tigress ten days before, and that the tail had been quite intact, mattered little to the almost nude and sun-blackened individual who gave us this piece of information : he was not shaken in his belief, for, though himself a fisherman, had he not been told by one of a local jungle tribe who knew everything about tigers.

CHAPTER XIII

GAME PRESERVATION IN INDIA

It is a lamentable and undeniable fact that many species of game have decreased in India during the last ten years, with an increasing rapidity which threatens their early extermination.

It is also a fact that, particularly in Northern India, most of the species affected are in no way responsible for the destruction of crops; among such being the Sind ibex, markhor, gaur, orial and shapu.

It is most noticeable that these entirely harmless species have suffered severely from persecution, no excuse being possible that their destroyers have slain in defence of their property, and, in order to arrive at the best method of preventing their extermination, it is essential to consider carefully the causes of their diminution of numbers.

Of late years there has been a considerable recrudescence of attacks on sportsmen and so-called "blood sports," on the grounds of cruelty and wanton destruction of animals; this last in spite of the self-evident fact that many forms of animal life would by now be extinct if it were not for the protection given them by sportsmen.

Such attacks have mainly emanated from uninformed sentimentalists, who have not troubled to examine the evidence available, or to weigh their charges of cruelty and brutality against the cruelty and brutality of (among several objectionable ways of providing meat for market) stuffing live fowls by machinery, or even the everyday slaughter of cattle and sheep for food. The plea that meat is a necessity

has been proved false by many strong and healthy vegetarians, and the brutalizing effects of the abattoir have not induced any noticeably great number of the sentimentalists to turn vegetarian.

Thus we have attacks on sportsmen by an eminent entomologist, who, being a fervid anti-shooting propagandist, has been employed by various periodicals to review books on big-game shooting (on the principle, it may be supposed, that a fanatical vegetarian would make a good constructive critic of the organization and methods of the meat trade), and has utilized such reviews as opportunities for anti-shooting propaganda.

Also we have a well-known wild life photographer, whose pictures are a delight to the eye, inveighing against big-game hunters on the score of cruelty, yet tying up live animals to be killed by carnivora in order to obtain flashlight photographs which improve the sale of his books.

It would appear from the writings of the above two gentlemen and other self-styled "protectionists," that they aim at preserving animals in minute portions of their habitat by the establishing of sanctuaries, and view with little concern their extermination over the rest of it. Nor have they, apparently, visualized the possibility of obtaining the co-operation of sportsmen and preservers of game (synonymous titles) to secure the continuance and probable increase of the threatened species over the whole or most of their habitat. That, by their study of game and correct methods of preservation, such sportsmen are better fitted to carry out the preservation than the "protectionists," has not entered the heads of the latter, who continue to argue on the untenable basis that the sportsman is the principal factor in the disappearance of game animals and is blindly destroying the source of his own pleasure and interest.

For some forty years the education of sportsmen, and their standard of ethics, have been advancing to the great benefit of the game animals of the world; and, while it is

not denied that there are black sheep among hunters whose standard of ethics is low in the extreme, the vast majority of big-game hunters have as their object the obtaining of a fine trophy, and most of the black sheep have the same object in view and only fail to be sportsmen in their methods of obtaining such a trophy.

The shooting of old males of any species does not necessarily have a detrimental effect on the numbers of that species; for the beast carrying the biggest head is usually past its prime and undesirable for breeding purposes. No big-game hunter will nowadays bring back undersized trophies; the remarks of genuine sportsmen are too effective a deterrent.

It may therefore be assumed that the sportsman trophy-hunter not only does not adversely affect the natural increase of the game, but, by the destruction of carnivora, may even have a favourable influence. One Snow Leopard in a Himalayan nullah, or three wolves, will kill a hundred head of game a year, while the quota of three sportsmen will be half a dozen.

It is the increase of guns in India, and the consequent increase of poachers, which is rapidly destroying the wild life of the country.

These guns are both licensed and unlicensed, and, while the unlicensed outnumber the licensed by three to one, the licensed gun is borrowed from its owner by all and sundry, and is at its work of destruction without ceasing. For some ten years after the war gun licences were issued by district officials to almost anyone who cared to apply and could produce the necessary fee.

The grounds on which such licences have been and are still issued, are the protection of crops and the social status of the applicant.

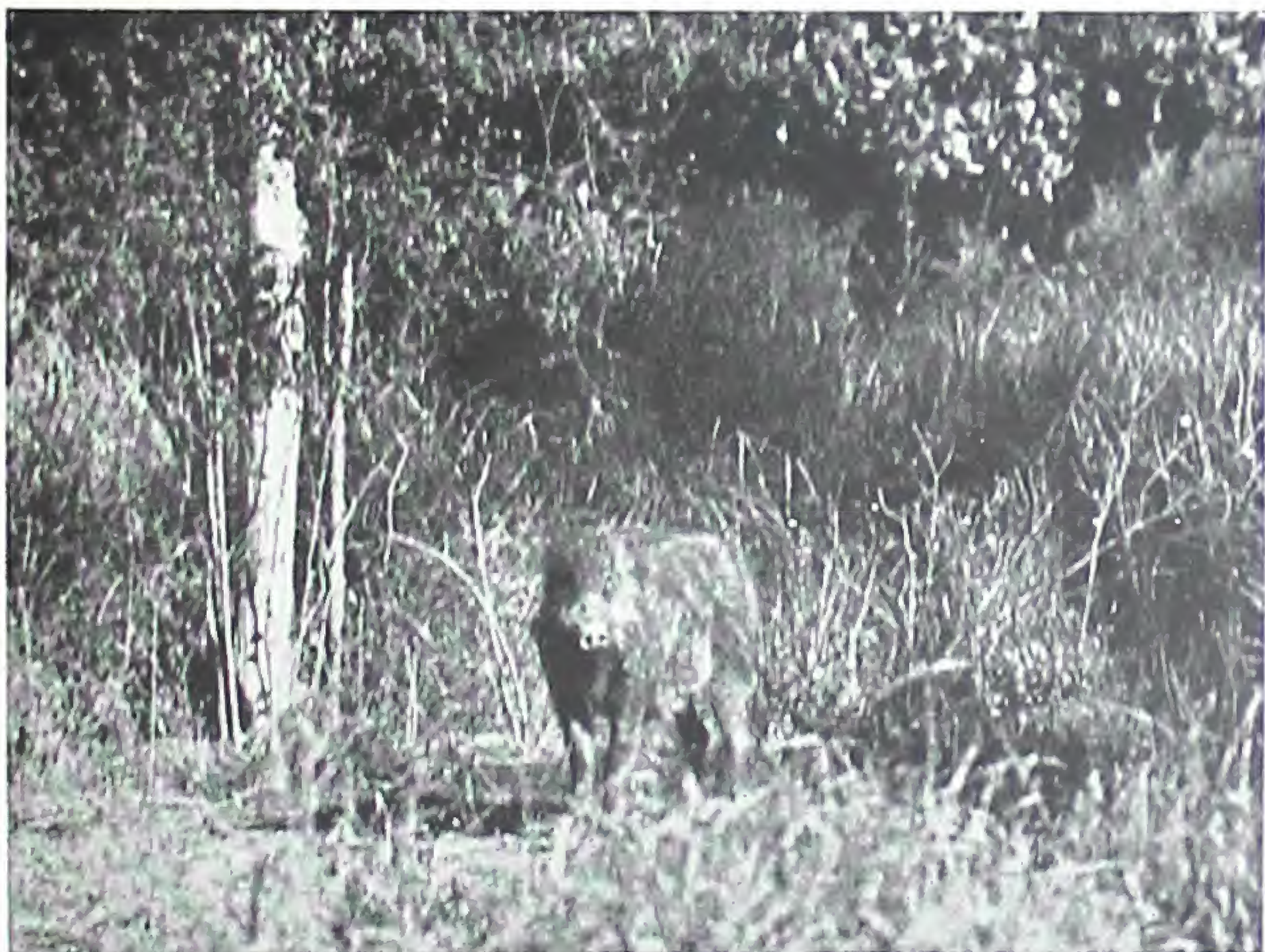
Every Indian who, in his own opinion, is sufficiently wealthy or of sufficient social standing, immediately considers it incumbent on him to own a gun; and, when

obtained, the weapon deals destruction in his hands, or those of his relatives, household and friends, to every living thing within several miles radius' of his residence.

The gun issued for crop protection may or may not be used for that purpose, but is certain to be used to destroy animals by hunting at long distances from the owner's home, very often in protected forests and, more often than not, animals which do no damage whatever to crops.

Throughout India, and in spite of the myriads of economically undesirable cattle and goats, which eat up valuable vegetation and render the Forest Officer's life a constant struggle to preserve the immensely valuable Indian forests against the hordes of destroying beasts, the Indian is possessed by a constant ravening for meat. Both avarice and stupidity deter him from killing cattle or goats for which he is hard put to it to find grazing sufficient to keep life in them ; for he is always hoping to sell them at a little higher price, and the possession of a greater number of animals than his neighbour, regardless of quality, is his standard of prosperity and often denotes his social status. He therefore allows his beasts to breed indiscriminately and destroy vegetation at will, while he will spend days of toil and hardship in pursuit of game in order that he may eat the meat and sell both it and the hide.

That the crop protection plea is as often as not only the excuse for the possession of a gun, is shown by the applicant's objection to a cut-down barrel, although such a weapon is quite efficient for the purpose for which the licence is ostensibly required ; while there is strong opposition to handing in the gun to the local authorities during periods when there are no crops to protect, such as in winter in the Himalayas. The principal crop-destroyer in the Himalayas is the Black Bear, and the wild pig in the plains ; but for every one of these killed twenty wild goats, sheep or deer will be shot, while these two pests will still flourish and be plentiful round a village long after every ungulate has been exterminated for

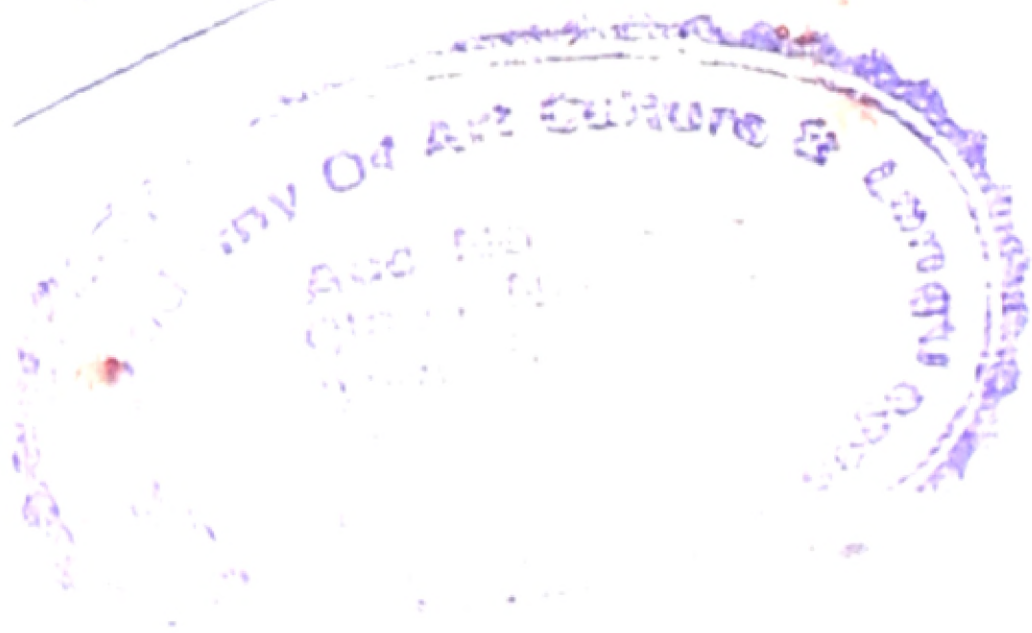


WILD PIG



NILGAI BULL

Cultural Academy



miles round; the only exception being in the case where the village is Hindu and the pig are concerned; for Hindus love pork.

That blackbuck do damage to crops is unfortunately true, but they are nowhere so plentiful nowadays as to have any tangible effect on the prosperity of the cultivator; and, having been five times in the last ten years in areas where they are to be found in greater numbers than anywhere else in India, I have found them regarded with complete equanimity by the ryot. In the case of the blackbuck it is not the local poacher who is exterminating these beautiful antelope, but the raider from the big town who comes in a lorry and takes back the carcasses for sale in the bazaar. There is even a native firm in Bombay which advertises the venison for sale.

It is this question of destruction for pecuniary profit which is the real crux of the problem in most of India. For meat, hide and horns all have their market value, while in the case of the Great Indian rhinoceros, whose numbers have been reduced to a total of about 250, every portion of the persecuted beast is held to have some medicinal value, the blood in particular.

The killing of a game animal for meat which is to be eaten on the spot is difficult to stop without good keeping, which is often too expensive to provide; but that there should be a regular trade in poached venison, and carcasses of deer and antelope brought into the markets of big towns, openly and without any legal deterrent to the men who have committed or incited the slaughter, is a disgrace to any civilized administration. That many thousands of game birds are sold in the open market during their breeding season is equally disgraceful.

The horns of deer are usually sold for manufacture into knife handles, etc., and the Forest Department control the sale of shed horns collected from Government forests; but for medicinal purposes, mainly aphrodisiacs, the horns are wanted in velvet.

The trade in trophies, thanks to the influence of sportsmen, has and is fortunately diminishing ; though the red bear has almost been wiped out in the Kashmir Valley by the efforts of the skin merchants, who have provided shikaris with guns and ammunition in order that they may sell the smuggled skins in the big towns of the plains.

What is urgently needed is the passing of a law forbidding the sale, or exposure for sale, of any portion of a game animal, with adequate penalties for infringement. A dead sambar being worth forty to fifty rupees to a poacher, it is useless imposing a fine of ten rupees for killing one illegally or attempting to sell the meat, hide or horns. Such a law could be very easily administered and could have no possible influence on the right of a man to protect his own crops from wild animals.

As long as the highly-placed show no signs of having a conscience in the matter of wild life preservation, it could hardly be expected that the public conscience would develop ; but for several years the Bombay Natural History Society and, more recently, the Society for the Preservation of the Fauna of the United Provinces, have been doing excellent work in disseminating correct information as to the status of Indian game and in influencing the administration to take measures for the protection of wild animals, before it is too late. It is largely through the efforts of the last-mentioned Society, well backed by the influence of the Governor, Sir Malcolm Hailey, that the U.P. Government has now in hand a National Parks Bill and a new Wild Life Protection Act which throws the onus of proof of legal possession of game or portions of game on the possessor. This last bill should be a very great help to the police in dealing with poachers. The Punjab Government is also instituting measures for the better protection of game.

Then an inter-provincial conference to consider measures for the better protection of wild life, was recently held in Delhi, and several admirable resolutions adopted ; but these

are resolutions only, and whether effect will ever be given to them remains to be seen.

The Nilgiri Game Association has saved the Nilgiri Tahr, and much good work of the same nature has been done by private effort in other parts of India ; but these results can only affect small areas, and what is wanted is a general knowledge all over India that the indiscriminate and wanton slaughter of wild animals will everywhere meet with due punishment.

A law forbidding the sale of any portion of a game animal anywhere in India would considerably reduce the killing of wild animals by making the supply too risky to be profitable ; but it would still remain to preserve them against the illegal killer.

First let us examine the question of sanctuaries.

The success of " National Parks," such as the Yellowstone National Park in the U.S.A., and the Kruger National Park in South Africa, have led many enthusiasts to rush to the conclusion that here is a universal panacea for all countries, the existence of whose fauna is threatened.

The principal point put forward in favour of National Parks by their advocates, is that the above two famous examples are more than self-supporting, showing an annual profit on their maintenance ; and, arguing from this basis, it is to be expected that National Parks in India would be equally self-supporting.

But the grounds of argument are by no means of equivalent value. There are very few guns, for instance, among Africans.

The Yellowstone Park is 4,000 square miles in extent, and the Kruger National Park is 9,000. The first has additional attractions for visitors, other than the wild animals, in the shape of trout streams, geysers and grand mountain scenery, and is provided with good hotels ; while the Kruger National Park has many rest-houses. Both have several hundred miles of motor roads, which serve to fulfil that

essential of a National Park—that it should be easily accessible to the nation. It seems unlikely in the extreme that a similar area, suitable for the purpose, can be found in India ; and that the Government of India, or any provincial government, will put down the money for the construction of motor roads, rest-houses, etc.

The animals in such a sanctuary would not have a hope of surviving if the park were not properly kept ; a recurring expenditure of considerable amount. The watchers would have to be adequately paid, and the superintending staff efficient and trustworthy.

To have any chance of attracting sufficient visitors for revenue to balance expenditure, a park would have to be within reasonable motoring distance of a well-to-do population, while such revenue would have to be obtained in about five months of the year, for few would be likely to visit it in the hot weather or rains. It is from visitors' motors that the revenue of such parks is derived ; in 1931 over 3,000 motors passed through the Kruger Park.

I have a fairly comprehensive knowledge of the game areas of India, and can think of none which fulfils the above requirements. The 160 square miles recently set aside by the Government of the United Provinces as a " National Park " would hardly seem to fulfil the essential conditions, as the area is too small, and, being in the foothills of the Himalayas far from any big town, and without any motor roads, it is practically inaccessible to visitors.

The Indian administration, as a whole, has yet to develop a conscience on the subject of preservation of wild life, though highly-placed administrators seem to have no qualms about taking advantage of the efforts of others when shooting in specially preserved areas. What is wanted is a business-like way of dealing with the problem.

Almost without exception the revenue derived from the issue of shooting licences is taken for the general expenditure of the Forest Department, and no whole-time watcher

employed to prevent poaching; the Forest Officer having the job lumped into the rest of his duties. With the rapid Indianisation of the Forest Service matters have become, and are becoming, worse: for the Indian who, through the passing of an examination, is appointed to the Forest Service, is usually town and university bred, and has little real knowledge of the jungle or desire for sport, though he may have a lust to destroy game. He has not, as a rule, the desire to preserve game or the knowledge of how to set about it, his duties being, officially, confined to showing a profit on forest produce to the improvement of the annual report, and anything outside that does not interest him. Modern forestry is an exacting and scientific profession, and leaves little time for efficient attention to the preservation of game.

Given a small staff for the sole duty of game preservation, and told that any diminution of game in the area under his charge would be counted to his discredit, he would tell the said staff to get on with it, and the good word would filter downward to the lowest levels and invigorate the watcher to the immense benefit of the game. The poacher being provided against, nature would soon accomplish the rest.

To find funds for the establishment of such a staff should not be difficult. The present fee of Rs 10 for a 10-day shoot in a forest block is absurdly low, and there can be little doubt that sportsmen would gladly pay three times that amount if they were assured that the money would go directly to game preservation, instead of being absorbed in general revenue. Where there are practically no forest operations and no expenditure, yet licence fees are charged for shooting and no protection given to the game, as in the oorial blocks of the Punjab and the Sind Ibex grounds of Lower Sind; it is most scandalous that the Forest Service has allowed such harmless and interesting wild animals to be slaughtered to the point of threatened extermination.

It has already been shown that the sportsman is not

merely an agent of destruction where game is concerned, and his ethics and education have now reached a pitch which makes him a person to be encouraged in every way. Even from the crude point of view of economics, and apart from all sentiment, he is a most desirable member of the community; for he distributes money among the very people who need it most, for game is invariably found in the wilder parts where the people are poorest, and the money earned by them for supplies, transport, and personal services as shikaris, etc., often makes all the difference between a lean year and a fat one.

Assuming, therefore, that it is most desirable to preserve game animals over as large an area of their habitat as possible, and that the appointment of a large staff of watchers is not feasible on the grounds of expense, it would appear obvious that the co-operation of sportsmen must be obtained if game is to survive, and that the funds for establishing a self-supporting game department must come from the shooting licences issued to them. The more shooting licences that are issued the more funds will be available for game preservation. Photography does not at present contribute funds for the preservation of game, as has now been found in Tanganyika, where, owing to the number of safaris which now go in for photography instead of shooting, the amount obtained from shooting licences is not sufficient to pay the upkeep of the Game Warden's department. In other words, game must be shot in order to provide protection for it. It would seem probable that a small fee will have to be paid by photographers if they are to find subjects for their cameras.

The fees for licences must not be so high as to deter sportsmen from going shooting, or the total funds available for game preservation will be diminished to an extent which will make protection impossible, except by the expenditure of much public money. Before the war the Kashmir big game licence cost Rs 60, over 500 sportsmen went shooting every year, and game flourished exceedingly. A little after



BARANOV HILLS IN FOREST DURING MARCH

Cultural Academy



the war, as receipts had fallen off owing to so many officers being employed on frontier and other small wars and unable to obtain leave, the licence was raised to Rs 125. There was a still further diminution of the number of licences taken out and, in 1934, the license fee was raised to Rs 175. The receipts from big game licences in 1913 were over Rs 30,000 ; in 1934 they were less than half this amount. Assuming that every sportsman distributes an average sum of Rs 1,500 among the people of Kashmir, that State was poorer by about Rs 650,000 in 1934 than it was in 1913. Moreover the big game is not nearly so plentiful as it was in 1913, despite the fact that the "rest" it supposedly had during the war ought to have resulted in a very great increase in its numbers ; poachers had unlimited shooting during the war, with no fear of interference from sportsmen, while the game watchers sat on their hunkers and did nothing, there being no interfering sahibs to tell headquarters that they were not doing their jobs.

Only in Burma, of all the Indian provinces, is a non-resident charged higher for his licence than a resident, and this very fair regulation, which is in force in every big game country outside India, should also be adopted throughout the sub-continent.

Also there should be no "free list" ; local officials should pay their fees like everyone else. Forest Officers are in the relation of land agents to Government, and the Forest Officer or Deputy Commissioner always has first choice of shooting blocks, so can make sure of the best shooting in his district, so there can be no rational objection to his paying the licence fee, which he can better afford than a subaltern.

It is hopeless to expect the revenue from licences to pay for keeping on the scale of Scottish deer forests, for India is too big and too poor a country ; but the co-operation of sportsmen will allow the game preservation staff to cover a much larger area than they could do if working unsupported. Sportsmen should be encouraged, even adjured on the pain

of not being given another licence, to furnish information to the Game Warden, of whom there should be one for each province. It is the sportsman who is in possession of the most recent information as to the prosperity or otherwise of the game, and it is mainly on his information that the intelligent Game Warden will base his operations. Not having a staff sufficiently large to cover the whole of his ground efficiently, he would be able to concentrate on the areas which most needed supervision, basing the distribution of his personnel on the information obtained from sportsmen.

The complete closing of any area to shooting, on the ground of scarcity of game, will almost inevitably defeat its own object, unless the Game Warden himself is able to visit it personally at intervals sufficiently frequent to judge whether the watchers are doing their duty or not; any diminution, or even non-increase of the game being punished by dismissal of the watcher.

The game watcher, being an Oriental, will inevitably show himself where those men come on whose reports his efficiency will be judged, and will allow the poacher to have free shooting in areas where their presence is not likely to be detected, with resultant trouble for the watcher. He will even, relying on the Game Warden being kept at headquarters by his office work, sometimes start a licensing department of his own, extracting a fee from poachers for shooting in closed areas.

The result of closing nullahs and blocks to all shooting has been sadly demonstrated in Kashmir, where "sanctuaries" have been opened to shooting after being officially closed for many years, and found to contain no game at all. The Sheltar nullah in Astor was closed for seventeen years and found to contain no game at all when opened to shooting, and is only now, after more than a decade of being open, beginning to hold a good stock of markhor. The Tiri Foo in Ladakh was an amon sanctuary for many years, and has

never been opened to sportsmen since about 1908. In 1905 it was full of game, and in 1933, when I went into it to try for photographs, there was not a game animal of any kind to be found. Nang nullah, only fifteen miles above Leh, the local game preservation staff's headquarters, was full of game (ibex, bharal and shapu) in 1930, but was closed next year. In 1933 a week's stay failed to reveal a single wild animal, but a couple of wolves passing through it. Several other similar instances could be quoted of the futility of closing areas to sportsmen without providing adequate keeping. It is far better to let sportsmen choose their own shooting grounds, instead of breaking it up into blocks, while limiting the number of guns, and the bag, where necessary in any particular area; they will naturally go to the places where there is most game and, having plenty of choice, no locality will be overshot.

That the Oriental ideas on the subject of responsibility and the taking of bribes do not coincide with our own, is a fact which must be reckoned with and allowed for. The fear of being found out, and consequent loss of the job, is the only effective deterrent as a rule. This is far more the result of upbringing and consequent outlook, than of engrained deficiency of morals, and the Indian soldier, as the result of discipline and training, makes a reliable game watcher when he goes to the reserve or on pension, while he is of proved physique and character.

There are thousands of such ex-soldiers only too anxious to obtain employment, and Rs15 a month would secure trustworthy servants of this class. Yet, in the oorial blocks of the Kala Chitta Range, near Attock, there is not a single whole-time watcher; though Rs10 is charged for a week's shoot in one of the four blocks. The Forest Department take the whole of the licence fees, and the oorial are rapidly disappearing from the district. One watcher per block would save the game, and there would still remain a pecuniary profit to the administration.

That a direct profit may be made out of the preservation of big game, when done on a business-like basis, had been proved in many parts of the world, and the indirect profit from the money distributed by visiting sportsmen is obvious. Catering for the tourist or sportsman has invariably proved advantageous when reasonably conducted, for such people are always generously minded when on a holiday, and allowing game to be destroyed indiscriminately is as foolish financially as it is criminal ethically.

The Indian Princes have shown the Government of India many fine examples in the matter of game preservation. His Highness of Patiala, himself a magnificent shot and expert handler of sporting dogs, has a well-administered Game Department, which controls shooting in his State while keeping the numbers of wild animals within reasonable bounds ; and he has shown his enthusiasm for sport by trying to acclimatize Scottish red deer and several species of pheasants in his hill domains. His neighbour, that very hardy sportsman the Maharaja of Jind, is particularly severe in his limitations of shooting, only allowing two birds per dog per day on which to train the sporting dogs for which he, his family and his staff, have such an enthusiasm. He also maintains a very strict supervision of the antelope and gazelle heads shot in his State.

Then in Dholpur, the Maharaja, a cousin of His Highness of Patiala, can show visitors wild sambar which eat out of his hands, and tiger lying in the sun on the shores of his lake.

His Highness Holkar of Indore showed me a most interesting series of tiger films, all taken by himself at the expense of great patience and perseverance ; and anyone who knows the retiring habits of tiger will appreciate what daylight photography of that fine animal means in the way of technical difficulties. H.H. Holkar could probably shoot a " record " number of tigers if he wanted to, but he prefers to keep his bullets for man-eaters and cattle-killers ; thereby setting an example which might well be followed by many notorious

tiger-slayers in India, who appear to be unable to sate their lust for the blood of these grand animals.

With such examples in the country in which they live, cannot our administrators in India rouse themselves to try and save the remains of that wonderful wealth of wild life which they have allowed to be squandered by all and sundry ? It need cost them nothing financially, perhaps a little unpleasantness with the professional politician who knows nothing of the great India outside the towns, and cares only for destruction without a thought for construction.

Recently a high official in an Indian State remarked to me that, while I had been advocating the preservation of game on economic and sentimental grounds : " It is also a great thing for a Prince to possess."

Cannot the Government of India carry the application of that remark a little further ?

APPENDIX I

OUTFIT.

Rifle and cartridges.

Shot-gun, if it will pay for its keep by filling the pot.

Field glasses.

Telescope, for the hills.

80 lb. tent, and two servants' tents, with iron pegs.

Table, chair, bed and bath.

Camp pocket-knife, to be worn on shackle of belt.

Leather cartridge-pouches for belt.

Rifle oil, cleaning patches, pull-throughs and clearing rod.

Pencils, diary, writing-block, envelopes and stamps.

Six yakdans.

Valise.

Rubber hot-water bottle.

Housewife, containing needles, cotton, etc.

100 feet of rope for tying up loads.

Maps.

Axe.

Hurricane lamps.

Petrol tin for kerosine oil.

Skinning knives and 200 6-inch nails for pegging out skins.

Preservative.

Measuring tape.

Kerosine oil tins for boiling up bath water.

Fishing rod and tackle, if likely to be useful.

MEDICINES.

Quinine hydrochlor, genasprin, salycilate of soda, calomel,

Dover's powder, permanganate of potash, boracic powder, bicarbonate of soda, chlorodyne, Epsom salts. Tincture of laudanum, borofax, iodex, adhesive plaster, compressed bandages and lint.

KITCHEN.

4 nested aluminium degchis, frying-pan and kettle.
Chopper, kitchen knife, large spoon, egg-lifter.
Board for cutting up meat, etc. A small mincing machine.
2 double hot-water plates for cold weather.
2 soup plates, 2 meat plates, 2 pudding plates.
Cup and saucer.
Teapot and milk jug.
Screw-top receptacles for salt, pepper and jam.
2 table knives, 2 small knives, 3 forks, 3 dessert and 3 teaspoons.

CLOTHES AND BEDDING.

Macintosh or greatcoat.
2 coats of shikar cloth, or puttoo suits in the hills.
2 pairs khaki shorts.
2 pairs puttees.
4 khaki or grey flannel shirts.
1 pair grey flannel trousers.
1 woollen cardigan.
2 old tennis shirts for wear in camp.
1 woollen scarf.
2 sleeping suits.
8 pairs thick woollen socks.
12 handkerchiefs, khaki.
3 bath towels.
1 pair nailed boots.
2 pairs canvas stalking boots, or rubber-soled chaplis for dry weather.
1 pair old tennis shoes for use in camp.
1 pair slippers.

1 topi and 1 puttoo hat.

Spare bootlaces.

Toothpaste, shaving soap, bath soap, Sunlight soap, 1 doz. jharans.

Blankets or sleeping-bag, according to climate, with a wadded rezai or quilt for the hills.

Mosquito net.

Pillow.

2 pairs sheets for the plains, but unnecessary in the hills.

Add for high altitudes : 4 thick woollen vests, 4 thick woollen pants, 1 pair woollen gloves, goggles for snow or glare, 1 khud stick.

BOOKS AND MAPS.

Neve's *Tourist's Guide to Kashmir*, Coventry's *Beautiful Flowers of Kashmir* (3 vols.), Whistler's *Popular Handbook of Indian Birds*, Evans's *Identification of Indian Butterflies*.

" Wellcome " Photographic Exposure Calculator, Handbook and Diary. Maps can be purchased from the Map Issue and Record Office, Survey of India, Wood Street, Calcutta.

It is well worth joining the Bombay Natural History Society, 6, Apollo Street, Bombay. The journal is excellent and information is readily given to intending hunters or travellers.

APPENDIX II

THE PHOTOGRAPHIC OUTFIT.

Reflex camera.

Lenses.—30-inch, 12-inch, and one short focus working at f.4.5.

Carrying case of three-ply, canvas-covered, with rucksack straps.

K.1 and K.3 light filters.

Direct vision detachable view-finder.

6 double dark slides, and one film-pack carrier.

Changing bag.

Developing tank.

Dark room thermometer.

Aluminium graduated pint measure.

2 xylonite mixing rods.

2 thick glass tumblers for mixing developer.

Reading glass for examining negatives.

1 dozen clips for hanging up negatives to dry.

Also advisable, 1 spare mirror and ground glass focusing screen.

CHEMICALS.

3 packets Rytol developer tabloids.

5 lb. acid fixing salt.

A bottle of hypo-killer if water may be scarce.

White ink for marking up negatives.

FILMS.

8 dozen high-speed cut films, and 2 film packs, will usually be enough for three months ; but more should be taken if scenery is to be photographed.

A couple of papier-mâché dishes and necessary chemicals may be taken if contact prints are to be made ; but printing is best left until return to civilization.

APPENDIX III

STORES (for two months for one person).

Flour : 25 lb. (Supplement with atta or rice.)

Yeast : Either in bag (Carrick's), or tin (Florilyn), or a little bought from the local baker just before starting.

Jam : 10 lb.

Raisly flour : 3 lb.

Dripping : 6 lb. (Supplement with mutton fat.)

Tea : 4 lb.

Sugar : 20 lb. (Probably more needed if very cold.)

Milk : According to district, but one or two tins of " Klim " always useful.

Soup squares, Bovril or Marmite. The latter is very good for high altitudes.

Cornflour : 22 lb.

Quaker Oats : 4 lb.

Macaroni : 1 lb.

Butter : 8 lb. (Obtainable locally in some districts.)

Curry powder : $\frac{1}{2}$ lb.

Salt : 2 lb.

Pepper, mustard.

Matches.

Bromo.

The above are essentials, and the following are advised in addition :

Sauces, cheese, cocoa, chocolate (almost essential), dried fruit (absolutely essential if fresh not available), sardines, army ration, raisins and currants for cakes and puddings.

Bacon, or a ham.

Plain biscuits as a substitute for bread are useful, and a reserve of candles is advisable in case of accident to lamps or oil.

DO NOT STINT THE FOOD.

APPENDIX IV

SYNOPSIS OF GAME REGULATIONS IN NORTHERN INDIA.

KASHMIR.—The big game licence, available from March

16th to November 15th, costs Rs 175 and allows the following head of game to be shot :

Ovis ammon	2	Barasingh	2
Shapu	2	Tibetan antelope	3
Bharal	3	Tibetan gazelle	1
Ibex	3	Tahr	4
Markhor	2	Goural	4
Red Bear	2	Serow	1

Black bear, leopard, wolf and lynx, unlimited.

LADAKH.—There are two periods open to eight guns in each ; 15th of April to the 14th July, and 15th July to 15th October. Eight of the fourteen ammon blocks are open each year, and ten of the sixteen shapu blocks. Changchenmo is open to three guns in each period, and an ammon block can also be booked by those obtaining a Changchenmo permit. Permits for the first period are issued in order of priority of arrival in Kashmir, but blocks for the second period may be booked any time after the 1st of January, but the licence fee must be paid at the time of booking. A map of the blocks is issued with each permit.

ASTOR.—There are six nullahs open in each period, and six guns allowed in each.

BALTISTAN.—The whole of Baltistan is open to licence holders, except three markhor and four ibex nullahs below Skardu, for which permits are issued in two periods as for Ladakh and Astor : one markhor and two ibex are allowed in each, and there are also ibex in the markhor nullahs. These nullahs are not necessarily the best, and there are other markhor nullahs, and innumerable ibex nullahs open in the ordinary way ; also some very fair shapu ground.

The rest of Kashmir is open to licence holders.

The winter licence, costing Rs 105, is not worth taking

out, unless a Kashmir stag (Barasingh) is particularly wanted, or it is intended to winter beyond the passes.

OORIAL.—There are four blocks in the Kala Chitta range, for which a permit may be obtained from the Deputy Commissioner, Campbellpur. A week's permit costs Rs 10 and allows one ram to be shot; a ten-day permit costs Rs 20 and allows two rams. There are ten blocks in the Jhelum District, for the Salt Range, and they are administered in the same way: permits from the Deputy Commissioner, Jhelum. There are probably more oorial in the Salt Range blocks nowadays, than in the Kala Chitta, but the latter has the best heads. In both districts application for a block must not be made more than one month ahead.

PATIALA.—A ten-day shooting licence, costing Rs 25, is obtainable from the Forest Officer, Plains Circle, Patiala.

KULU, SPITI AND LAHOUL.—These are in the KANGRA District of the Punjab, and a licence, with limited head of game to be shot, is obtained from the D.F.O., Kulu, or D.F.O., Kangra, and is in force for one calendar year. The licence costs Rs 20, and a certain number are reserved for the residents in the Kulu District.

UNITED PROVINCES.—Forest blocks can be obtained for fifteen days at a fee of Rs 10 per gun of the party, with a limited head of game per block. Such permits are nearly always for the latter half of the month, being governed by the Christmas shoots: fifteen days must elapse as a period of rest between shoots. Application for a block can be made three months in advance, and should be made very early if a good block is to be booked. Application to be made to the Divisional Forest Officer.

KUMAON is divided into East and West Kumaon, and

permits covering three months at a time can be obtained for Rs 15. One of these permits will cover all the Government forests in the Division, and can be obtained from the Divisional Forest Officer, East (or West) Kumaon, Almora.

CENTRAL INDIA AND THE CENTRAL PROVINCES.—The Government forests are administered, as far as shooting is concerned, in the same way as those of the United Provinces, but the fee for a block is usually Rs 15.

NORTH-WEST FRONTIER PROVINCE.—There are no game laws.

BALUCHISTAN.—There are shooting blocks containing straight-horned markhor and oorial (locally “gad”) in the vicinity of Quetta and Ziarat, the latter being the best. Regulations are the same as for the oorial blocks of the Punjab.

Most of Baluchistan is open to shooting, and is much shot by the local tribesmen. There is some good fishing and some small game shooting.

SIND.—The Khirthar Range used to contain many Sind ibex and oorial, but most of them have been killed off by poachers. There is still much good fishing and small game shooting on the east flanks of the range in the Karachi, Dadu and Larkana Districts. Application should be made to the Deputy Commissioner concerned if big game is to be shot.

COUNTRY NOT UNDER FOREST ADMINISTRATION.—There is much country in Northern India where the shooting is quite free, but it is essential to consider the feelings of the local villagers or trouble may result. In much of the United Provinces peacock are sacred, and the killing of pigeons is also objected to in Rajputana and the South-West Punjab.

In the Hissar, Sirsa, and Abohar Districts of the South-West Punjab there are many villages of Jains and Vishnoi's, who strongly object to any shooting over their lands : their religious tenets forbidding the taking of life but not restraining them to any great degree where the life of a man who offends these tenets is concerned.

A want of consideration for local prejudices may not only result in a complete absence of essential local assistance, but possibly in an outbreak of violence.

The Indian peasant, when treated with kindness and consideration, is usually a very pleasant person to deal with ; but he has no match as a passive resister or obstructionist when his religion or customs are not properly respected.

APPENDIX V

CAMP COOKERY.

BUTCHERING MEAT.—After killing and skinning, remove liver and kidneys, also heart, tripe and head for servants.

Hang up carcass by hind legs, and cut away both shoulders, holding each well away from body to cut tissue between. Then chop straight down middle of breast bone, and holding ribs on one side, chop down at junction of ribs and spine, holding the chopper inclined towards the spine so that it goes through centre of vertebræ. Cut through spine at level of last rib, then cut away saddle close up to junction with tail-piece (sacrum). Then cut away each hind leg at the joint. Most cooks spoil the saddle by cutting through it half way, and then including the tail-piece.

To hang meat or game, suspend from branch or tent-pole in shade, with muslin bag to cover. Meat or birds should never touch when hung, or they will go bad at the point of contact.

BREAD.—Mix 3 lb. of flour with a dessertspoonful of salt

and 2 of sugar in a warm basin. Drop 1 teaspoonful of Florilyn yeast into $1\frac{1}{2}$ pints of warm water. Stir and beat constantly for 20 minutes at same temperature, then work into the flour by hand gradually from the sides until a smooth dough is formed. Score across the top with a knife and set in a warm place to rise to twice its bulk ; this takes about 3 hours in a hot sun. When well risen knead thoroughly until the dough leaves the fingers clean. Form into 6 loaves and bake in well warmed and slightly greased tins for about $\frac{3}{4}$ hour. Before baking leave in a sheltered place for about 20 minutes.

For wholemeal loaves use half atta, half flour.

Warmth is the secret of good bread making, and if at a high altitude when the sun is not hot enough, place the dough in an empty yakdan with a filled hot-water bottle to warm the air, and close yakdan until the bread has risen. Baking must be done in a hot oven. Wholemeal bread and scones keep better than of flour only.

WHOLEMEAL SCONES.— $\frac{1}{2}$ lb. flour, $\frac{1}{2}$ lb. atta, 1 teaspoonful salt, 3 oz. butter, 1 tablespoonful sugar, 2 dessertspoonfuls Raisley. Milk to mix.

Mix Raisley, salt and flour together. then rub in the butter. Add atta and sugar. Gradually stir in enough milk to make a soft dough. Turn on to a floured board, divide into two equal parts and roll each into a round an inch thick. Sprinkle with atta and mark a cross on each. Place in buttered tins and bake for 20 minutes until light brown.

ROCK CAKES.— $\frac{1}{2}$ lb. flour, 3 oz. butter, 3 oz. sugar, 3 oz. currants, 1 egg and a little milk. A dessertspoonful Raisley.

Rub the butter into the flour, add all the dry ingredients. Beat up the egg with a little milk and mix to a very stiff dough. Have ready a well-greased tin and place the mixture in rough heaps, about 1 dessertspoonful each, on the tin about 2 inches apart. Bake in a quick oven about 20 minutes.

Note.—Indian cooks are very careless about measuring quantities, and will try to guess at them.

SOUPS.—Making Broth. Chop and wash any bones and put with trimmings of meat or chicken into a degchi of cold water. Add salt, onions and other vegetables procurable. Bring to the boil, then simmer with the lid on, gently for 4 or 5 hours. Skim and remove fat when cold. A little Bovril or Marmite added just before serving is good.

CLEAR SOUP.—Make in same way, but the white of 1 egg with the broken shell is beaten up in the stock 15 minutes before serving. The scum is then removed and a teaspoonful of Marmite or Bovril added.

PEA SOUP (Hill peas).—Hill peas are very tough and need much cooking. Shell peas and cook with enough water to cover, a pinch of salt and a teaspoonful of sugar. Simmer gently for about 2 hours until tender. Mash the peas and add to the water in which they were cooked. Add a little milk, a small lump of butter and a little pepper. Bring to the boil and serve.

POTATO SOUP is made in the same way, but omitting the sugar.

FISH.

FRESH FISH.—The whole fish can be washed and cleaned wrapped in a well greased paper and baked.

FRESH FILLET.—Remove the bones, brush with a little beaten egg, roll in oatmeal or breadcrumbs and fry.

TINNED FRESH HERRINGS can be wrapped separately in greased paper and fried. Or they may be eaten cold with pepper and vinegar.

FISH CAKES.—The remains of fresh or tinned fish, with bones removed and finely flaked, are mixed with an equal quantity of cold mashed potatoes. Mix in a little butter, salt and anchovy sauce. Form into rissoles, roll in egg and breadcrumbs and fry.

FISH PIE.—Take equal quantities of cold fish and mashed potatoes or breadcrumbs. Remove bones, flake and mix with a little butter and anchovy sauce. Put into pie dish and bake till brown.

MEAT.—Roasts must not be parboiled first, as Indian cooks like to do. Plenty of fat must be allowed and the joint or bird frequently basted. Allow $\frac{1}{4}$ hour to the pound, and $\frac{1}{4}$ hour over.

Pinning a couple of slices of bacon on the breast of a bird improves the flavour greatly.

BOILED MEAT.—Should be put into boiling salted water to seal up the juices. Allow to boil for 5 minutes, then simmer very gently for about $1\frac{1}{2}$ hours for a 3-lb. joint. When the meat is cooked for $\frac{1}{2}$ hour add a little rice, potatoes, onions and carrots.

To boil a ham: A (well-cleaned) kerosene oil tin will serve for a 12-lb. ham. Allow 20 minutes per lb. and 20 minutes for the ham, which should be soaked previous to cooking for at least 24 hours in several changes of cold water.

DUMPLINGS are a great improvement to boiled meat. $\frac{3}{4}$ lb. flour, 2 oz. fat (not butter), salt and pepper.

Mix the flour, salt and pepper together, then rub in the fat thoroughly. Add enough cold water to make a soft dough. Drop pieces of suitable size into the hot liquor in which meat is simmering, and boil for 15 minutes; longer will make them heavy.

FRESH MEAT RISsoles.— $\frac{3}{4}$ lb. minced meat, 1 oz. butter, 1 egg, 2 oz. mashed potatoes. 1 teaspoonful Worcester sauce. Salt and pepper.

Mix the minced meat, butter, egg, Worcester sauce, pepper, salt and potatoes well together. Form into rissoles, roll in flour and fry. If egg and breadcrumbs available, coat with these.

POTTED MEAT can be made from any left-over meat which has already been cooked once. Take any quantity of minced meat. Mix with a little salt and pepper, and enough butter to render the whole smooth. Put in a jar. If kept cool this will keep for several days.

LIVER should be rolled lightly in a mixture of flour, pepper and salt, then quickly fried. It must be eaten fresh. Indian cooks often soak it first in water, which makes it tough.

BOILED TONGUE.—1 tongue, 1 carrot (large), 1 onion, a handful of rice or pearl barley.

Wash the tongue and place in well-salted tepid water. Bring it to the boil. Remove scum, add the vegetables and simmer slowly for 5 hours in a tightly covered degchi. Dumplings are a great addition.

KIDNEYS.—Fried, or stewed in milk with a lump of butter, pepper and salt. If “guchis” are available they make an excellent addition, and should be cooked slowly with the kidneys.

POULTRY.—Must be well basted during roasting, not first parboiled in water. Allow $1\frac{1}{2}$ to $1\frac{3}{4}$ hours for a duck, according to size and age. 40 minutes to an hour does for the average Indian chicken.

PUDDINGS.

RICE PUDDING (for one person).—1 level soup spoon rice, 2 dessertspoonfuls sugar, a lump of butter the size of a walnut, $\frac{1}{2}$ pint milk.

Put ingredients in a pie dish and bake in the oven for 1 to $1\frac{1}{2}$ hours. A little cocoa, or raisins, added makes a change.

BREAD AND BUTTER PUDDING.—Cut thin slices of bread and butter, place in a pie dish, sprinkle over them some

sugar and a few currants and raisins ; add another layer similar to this, and so on until the dish is half full. Beat up an egg in a pint of milk and pour over. A little grated nutmeg on top is an improvement. Allow the pudding to soak for an hour, then bake in a slow oven until golden brown.

BAKED CUSTARD.—2 yolks of eggs, 2 dessertspoonfuls of sugar, a little less than $\frac{1}{2}$ pint milk.

Beat up the yolks, add the sugar and milk, stirring the whole together. Pour into a pie dish and bake very slowly, standing the dish in a tin of water to prevent curdling. If liked a little cocoa may be added, being mixed with 2 spoonfuls of the milk before putting into the mixture.

SUET PUDDING.— $\frac{1}{4}$ lb. flour, 2 oz. suet, 1 dessertspoonful Raisley.

Mix the flour, Raisley and chopped suet well together with the fingers. Add sufficient water to make a stiff paste. Put into a greased basin and steam for 3 hours. Should be eaten with golden syrup, and when cold can be sliced and fried.

If the water is not boiling when the pudding goes in, and is not kept boiling throughout, the pudding will be heavy. The suet must be fresh.

JAM ROLYPOLY.— $\frac{1}{4}$ lb. flour, 2 oz. suet, pinch of salt, 1 dessertspoonful Raisley. Water to mix.

Chop the suet finely, mix all the dry ingredients together, and make a stiff paste with the cold water. Turn on to a floured board, roll out to the size required. Spread with jam and moisten the edges with water, then roll up. Fold in a scalded and floured cloth, tie up the ends with string and boil for $1\frac{1}{2}$ hours.

CHOCOLATE SOUFFLE.—Put 1 tablespoonful of cocoa and the same of sugar, together with 1 dessertspoonful of cold water into a small degchi. Melt slowly over the fire until it becomes a smooth paste, then remove from fire. Add

the beaten yolks of 3 eggs, mixing well into the paste, and put aside to cool. Beat up the whites of the eggs to a very stiff froth, then add gradually to the chocolate mixture, mixing lightly. Bake in a moderate oven for 15 minutes and serve the moment it is ready.

CHOCOLATE MOULD (for one person).—1 oz. cornflour, 1 dessertspoonful cocoa, $\frac{1}{2}$ pint milk, 2 dessertspoonfuls sugar.

Put the cornflour and cocoa into a basin and mix with a little cold milk. Put the rest of the milk on to boil with the sugar. When boiling pour over the cornflour and stir well. Return to the degchi and boil for 5 minutes, stirring all the time. Turn out into a mould which has been rinsed in cold water.

CORNFLOUR MOULD is made the same way as chocolate mould, omitting the cocoa.

STEWED FRUITS.—Wild rhubarb, raspberries, apricots and apples are delicious stewed. Add enough water to cover the bottom of the pan, 2 heaped dessertspoonfuls of sugar. Bring to the boil then simmer till soft.

PANCAKES.—4 oz. flour, 2 eggs, $\frac{1}{2}$ pint milk, a little fat for frying.

Make a batter with the milk, eggs and flour, beating well with a spoon until it is smooth and creamy. Leave for $\frac{1}{2}$ hour. Melt a piece of good fat the size of a walnut in the frying-pan. When it is very hot pour in about 2 tablespoonfuls of the batter, and cook over a clear fire. The pancakes must be eaten immediately they are cooked or they will be leathery.

BOMBAY TOAST.—Cut slices of bread of medium thickness into fingers. Beat up an egg and dip the slices in it. Have ready a frying-pan in which has been melted a small lump of butter. When the butter is very hot put in the slices of bread and fry golden brown. Lift out, sprinkle with sugar and serve.

SAVOURIES.

CHEESE BALLS.—Whites of 2 eggs, 2 oz. grated cheese, salt and pepper.

Beat the egg whites into a stiff froth, stir in the cheese, salt and pepper. Shape into balls the size of large marbles and drop them into boiling fat. Fry for about 5 minutes until light brown.

CHEESE MACARONI.—6 sticks macaroni, 2 heaped dessert-spoonfuls of grated cheese, salt and pepper, 1 egg, $\frac{1}{2}$ pint milk.

Cook the macaroni in the milk until tender, drain and put in a pie dish. Beat the egg and mix with salt, pepper, and half the grated cheese. Mix with the macaroni. Add the remainder of the cheese sprinkled on top. Bake for about 20 minutes until nicely browned.

SARDINES IN BACON.—Roll a small rasher of bacon round each sardine and fry in boiling fat.

SARDINES IN BATTER.—3 oz. flour, pinch of salt, 1 tablespoonful of melted butter, 2 tablespoonfuls tepid water, whipped white of 1 egg, sardines.

Put the flour and the salt into a basin, pour in the melted butter, then add the tepid water gradually, stirring until smooth. Beat for 10 minutes. The batter must stand for at least $\frac{1}{2}$ hour. Then lightly add the whipped white of egg and the batter is ready for use. Dip the sardines in the above mixture and fry a golden brown.

BUTTERED EGGS.—2 eggs, small lump of butter the size of a walnut, 1 dessertspoonful of milk, salt and pepper. Buttered toast.

Put the butter into a small degchi to melt, beat the eggs well with the salt and pepper, add the milk, stir well and pour into the degchi. Keep stirring, with the spoon working well on the bottom of the degchi to avoid burning, until the mixture thickens. Put on to the buttered toast and serve.

OMELETTE.—3 eggs, lump of butter the size of a walnut, salt and pepper, 1 dessertspoonful of cold water. Whisk the eggs well with the water, salt and pepper. Melt the butter in the frying-pan, and when boiling pour on the beaten eggs. The mixture should immediately begin to set at the edges, and they can be folded over as setting continues, the omelette being served before the centre has quite set. It is useless trying to cook an omelette slowly ; it will be like leather.

GENERAL HINTS.

Vegetables are much better steamed, though they take longer to cook. Place them in a small degchi inside a big one, or on a plate raised above the water in the degchi, and cover while they cook in the steam.

An oven can be made on the spot or a circular cover carried with one. An old kerosene oil tin makes an excellent oven, by resting it on three short iron rods between two small mud walls. A third wall should be carried up a few inches at the back of the tin to make a flue, and the top of the mud walls built over with mud or sticks. A door to the tin can easily be made of an overlapping bit of tin (like the lid of a biscuit tin) with a handle in the middle. If the cook prefers to carry a cover (about 6 inches deep) which he can place over the dish to be baked, it may be preferable to let him do so. The dish is placed on a bed of hot ashes, the cover placed over the whole, and hot ashes piled on top of the cover.

Inspect cooking pots frequently, and have the kitchen yakdan turned out at least once a week. Indian servants delight in accumulating undesirable extras.

Make the onions and the kerosene oil keep themselves to themselves.

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